

ARMY

AUGUST 1961 • 60¢

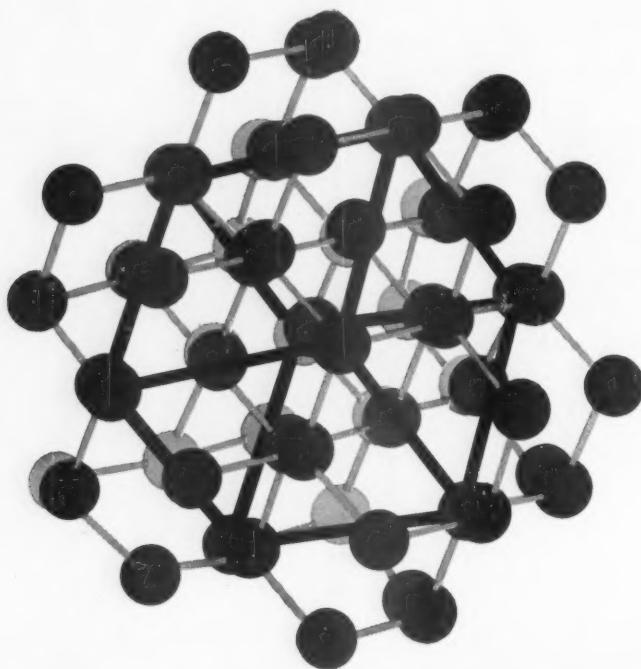
*The
Ready
Guns
of Berlin
Command*

**"The world must
know that we
will fight
for Berlin..."**

**PRESIDENT
KENNEDY**



U MICROFILMS
313 N FIRST ST
ANN ARBOR MICH



MOLECULAR ELECTRONICS PROGRESS AT WESTINGHOUSE: COMPLEX SYSTEMS MADE WITH MULTI-FUNCTION "BLOCKS"

Multiple electronic circuit functions in microscopic solids—and successful combinations of these tiny structures into systems—have actually been accomplished in the Westinghouse molecular electronics program.

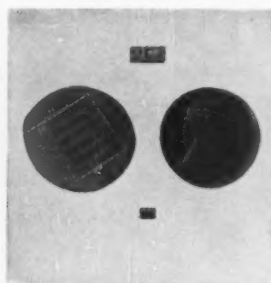
Examples include an operating UHF communications receiver, a 3-bit binary computer unit, and a digital guidance receptor. Although still in early development, these examples are working demonstrations of molecular electronic systems. They indicate exciting things to come in this revolutionary new field.

Primary goal of space-saving molecular electronics is systems reliability . . . functional electronic blocks have fewer components and connections . . . less power is needed, less heat generated . . . redundancy is simple to achieve.

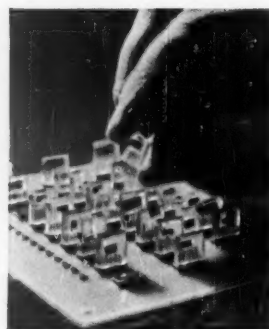
Working under an Air Force contract, Westinghouse scientists have invented tiny molecular blocks to do many sophisticated electronic jobs. They have made new semiconductor materials, grown crystals in ribbons and layers, and developed the industry's most advanced techniques for fabricating circuits in molecular blocks.

Pioneering in this important field is another of the many ways science serves defense at Westinghouse. Defense Products Group, 1000 Connecticut Ave., N.W., Washington 6, D. C.

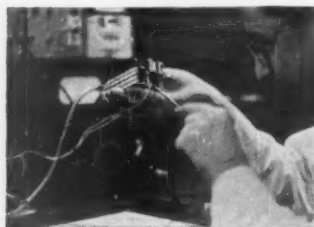
Westinghouse



Three of many functional blocks: top center, a transistor "and" gate replaces 6 conventional components. Lower center, a 10 MC video amplifier for telemetering. Planar device at left contains 20 resistors, 8 transistors, 40 diodes—all diffused.



Here is a laboratory model of a three-bit binary computer circuit with 26 encapsulated molecular gates working together as a unit. Tiny "and" gate (held) contains 4 diodes, 1 resistor and 1 transistor.

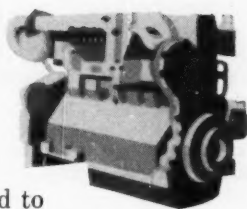


Hybrid molecular electronic UHF receiver, being developed for the Air Force, was designed with specifications of the AN/ARC-63 as a guide. Circuits operating below 30 MC are constructed with molecular electronic blocks.



Westinghouse work in molecular electronics for the Air Force is under the jurisdiction of the Aeronautical Systems Division's Electronic Technology Laboratory.

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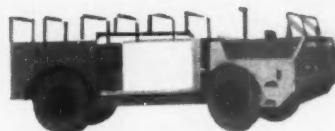
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ARMY

A PROFESSIONAL PUBLICATION DEVOTED TO THE ADVANCEMENT OF THE MILITARY ARTS AND SCIENCES AND REPRESENTING THE INTERESTS OF THE ENTIRE U. S. ARMY

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COVER. Constant training keeps the Berlin Command in a high state of readiness.
Photo by the U. S. Army Signal Corps.



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GOOD YEAR

ELECTRONICS: Another Prime Capability of Goodyear Aircraft



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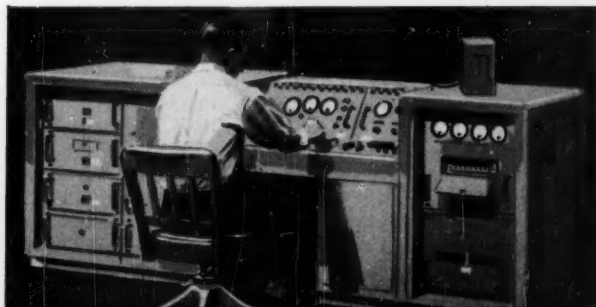
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ARMY

letters

ACCURIZING MILITARY WRITING

● Years ago, when I was at Benning, I was absorbing such language as you describe in your interesting article, "Battered Military Ornaments" (June). I particularly enjoyed your example of how the semiautomatic rifle jammed and the words used to explain it. It was typical.

MAJ. GEN. J. D. PATCH
Corpus Christi, Tex.

● My fervent comment on your article on "accurizing" military English is: Amen, brethren, ay-men!

LT. COL. STEDMAN CHANDLER
San Francisco, Calif.

● I must admit to a small amount of irritation at "Battered Military Ornaments" in your June issue. I agree there are abuses of the English language as the author humorously portrayed, but every specialty has its phraseology. Is this particularly bad? At a time when "consistency" can be equated to a "lack of originality," group individualism provides a somewhat refreshing counterbalance.

Oh, yes, Mr. Anthony needs a new dictionary. Webster's *New International Dictionary*, second edition, 1961, gives thumbs up on "sophisticated missiles." He might also check "format."

CAPT. ROBERT L. ACKERSON
Fort Myer, Va.

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We have Webster's NID, second edition, 1961, which was consulted before publishing "Battered Military Ornaments." The editorial staff split on "sophisticated", some of us holding that Mr. Anthony was being cruelly narrow in his interpretation of the dictionary. But he was writing the article and so we let him have his way. Capt. Ackerman might check "format" himself.—THE EDITORS.

NOT SPECIAL FORCES

● The article on Special Forces in the June issue was very interesting. However, the pictures on pages 45, 46 and 49 are not of Special Forces origin. The two men in the wheat field were members of Company D, 11th Armored Cavalry. The picture was taken in June 1958 just outside Landshut, Germany. The four men wading the creek were also members of Company D. The river crossing was over the Isar in southeast Bavaria just below Landshut. The occasion was a training exercise in dismounted squad-sized reconnaissance patrolling.

CAPT. XAVIA M. HOLT
Fort Knox, Ky.

EVENTUALLY: ONE FORCE

● Much has been written about reorganization: ROCID, ROCAD, Pentomic, and subsequent schemes. It would appear that by 1975 there will be one "U. S. Force." The term, no doubt, will raise eyebrows among all senior service commanders, but by logical, analytical thinking, the culmination of all reorganizations will be a U. S. Force. The varied current services are not prepared to cope totally with any outbreak or breach of national treaties and doctrines. Each depends upon another for some aspect of support to effect any particular mission or specialty of the particular service. For example, the Marines need the Navy to support an amphibious assault; airborne troops depend upon the Air Force for transportation.

To control a U. S. Force we need a task force commander. Say we are preparing to quell an outbreak in a nearby country. A task force would be immediately set up utilizing marines for the assault, transported by the

Navy; at the same time, Army airborne troops would jump off, transported by the Air Force; other Army units would follow, also using Navy transportation. Preparatory operations would include intelligence studies, frogmen activities, and the like.

In the past, all these services had to coordinate, re-coordinate, bicker and barter. Under the task force commander, all elements would be under a single headquarters.

* * *

Naturally, the U. S. Forces would have only one uniform, a single set of insignia (branch specialties would be the only distinctive device), and a combination of land, air, and marine subjects in basic training.

This course is inevitable, so why not prepare ourselves for it now? We know that all reorganizations are appeasements and concessions to our current requirements. Let's look beyond our noses!

CAPT. GEORGE MANDREKY
Flint, Mich.

CREDIT FOR BLUE SPADERS

● I guess I won't ever be able to get a job as proofreader. My S3 was reading my article "Tailor Your Own" (June) and, as a good S3, noticed that the unit listed as the 24th Regiment should have been the 26th. My original sketch was right but my draftsman copied it off wrong—couldn't read my writing, I guess.

I am sorry about this; particularly since the Blue Spaders are one of the outstanding battle groups in the 8th Division, and good friends. I am sending a note to their CO to express how sorry I am about the error.

COL. T. C. MATAXIS
APO 185, New York, N. Y.

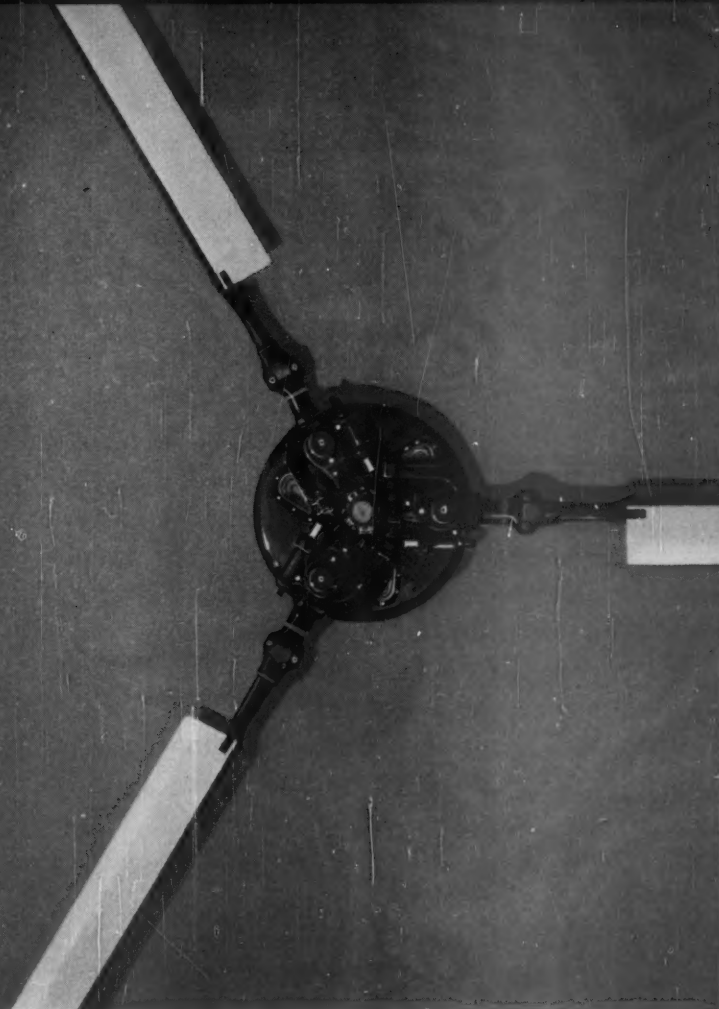
IT WAS FROM THE HEART

● I am amazed at the lack of discretion displayed by your editorial staff regarding Lieutenant Saks's "Operation Amigo" (June). ARMY, I suspect, has an international circulation, and the blatant politically opportunistic tone, implications, and statements scattered all through the article certainly did not help the nation in its effort to win friends.

We Americans have always rightly felt that our aid efforts are directed to people from the heart. That such aid is politically worthwhile is a comparative side issue. We also know that communist aid is merely another aspect in their all-out effort to conquer the world. That such aid also helps people—temporarily—is actually an unimportant point so far as

BOEING VERTOL 107'S

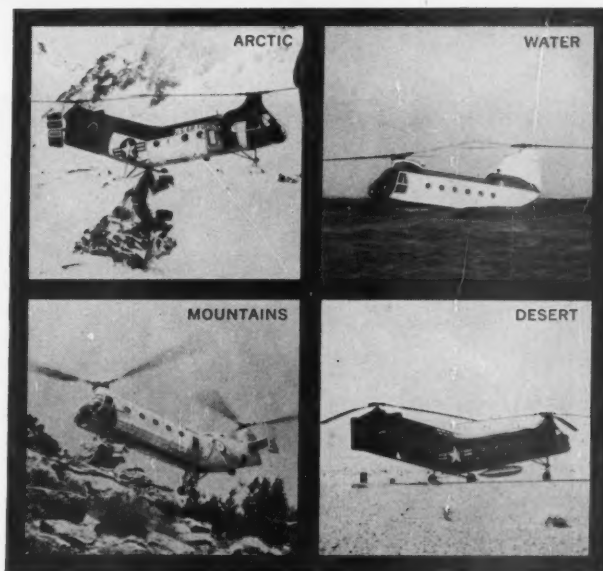
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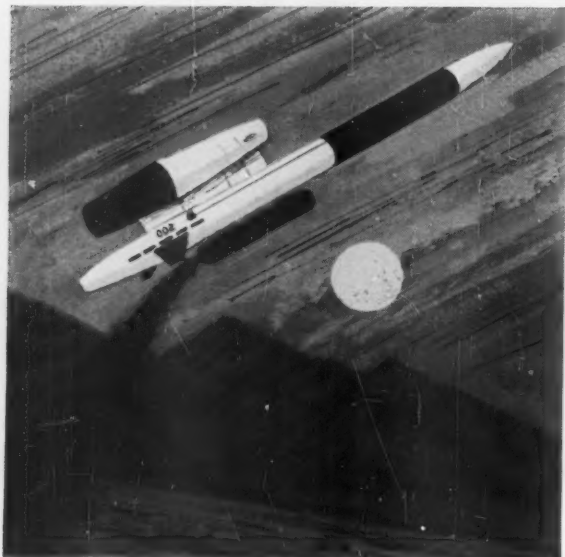
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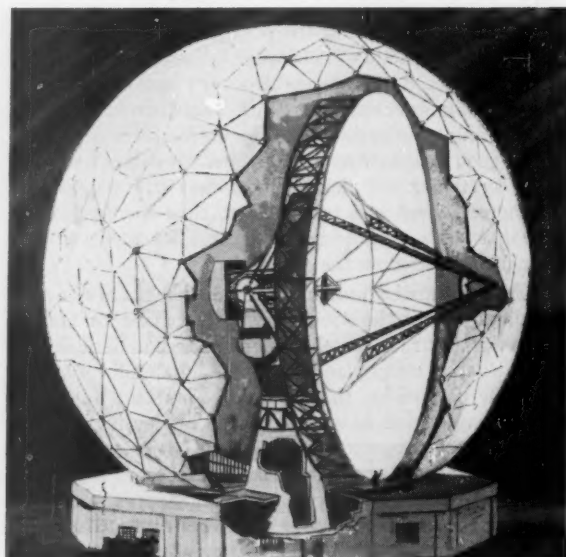
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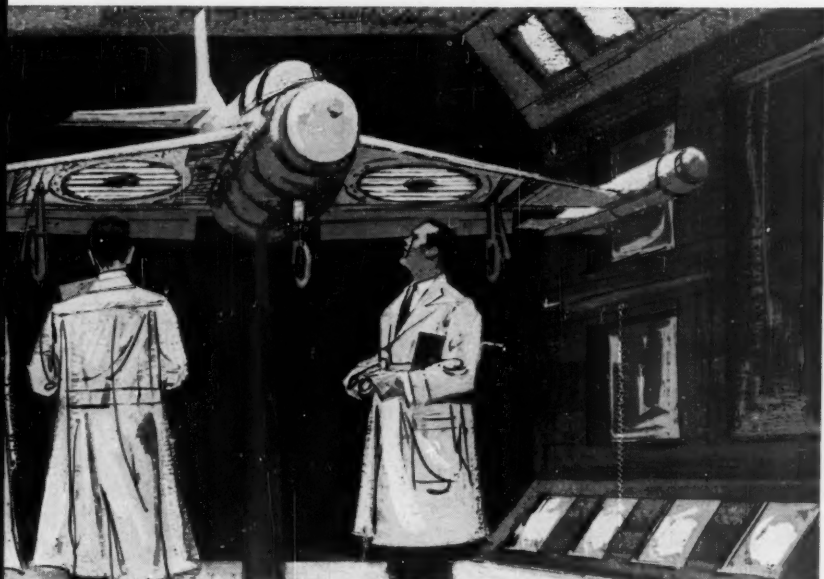


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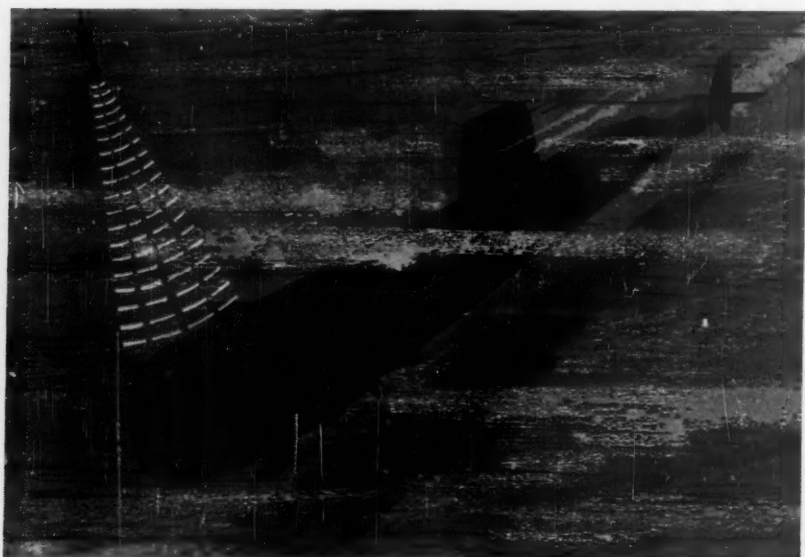


"HAYSTACK HILL" ANTENNA. A 120-ft. antenna system, using a new concept that distributes tension evenly to avoid distortions in readings, is being built by Columbus for USAF on Haystack Hill near Boston, Mass.

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LETTERS

the communists are concerned. Why, then, publish an article that gives your readers such a false view of our aid efforts, especially when so many of your readers are influential foreign soldiers?

LT. DAVID G. EPSTEIN

Fort Devens, Mass.

PROMOTION AND MORALE

● Congratulations and thanks to Captain Richard P. Fox for "Make Him When He's Due" (June). I don't know if Captain Fox is or has ever been connected with the career counselor or reenlistment field, but if not he is a good prospect. His grasp of the promotion phase of the reenlistment attitude is extremely good.

During the past year I have had to recommend and arrange for promotion, both temporary and permanent, for several deserving privates before their reenlistment. Not only is morale a large factor, but that crowfoot stripe means ten dollars a month, plus a goodly increase in reenlistment bonus. Many good men have left the service because they weren't promoted when they were due.

Perhaps commanders and senior noncommissioned officers who read Captain Fox's article will implement the suggested system and save for the Army some good men and a lot of training money.

SFC DAVID G. DRIVER

Fort Bragg, N. C.

● I couldn't be more in agreement with Captain Fox. With me there's a distinct feeling that we oldsters who were the youngsters of 1940-41 have lost sight of the fact that young men *can* and *will* accept responsibility if it is given them.

Don't ever believe that these outwardly blasé young men are indifferent to that new stripe. Best example I can cite is the way they answer the phone: "Pee Eff Cee Jones speaking, sir," or "Specialist Smith speaking, sir." Are these the words of men who just plain don't give a hoot whether the Army recognizes their ability or not?

Every year the Army loses thousands of bright young men because we don't "make him when he's due," or can't make him above the grade of E-4 because of the frozen MOS.

SGT. HAHN FUGLEMAN

MISSIONS AND HARDWARE

● Colonel Legere's fine article, "Military Advice for a Strong President" (June), sets forth clearly and con-

LETTERS

cisely issues which are usually befogged with emotionalism and ignorance. His analysis is sharp and penetrating; his suggestions for improving the flow and intrinsic content of the military advice to the President merit serious attention.

Two interesting points come to mind in connection with his comments on the creation of functional commands.

(1) Since it is proposed that the functional commanders replace the service chiefs on the JCS as the principal military advisers to the President and the Secretary of Defense, they cannot be expected to discharge operational tasks in the field at the same time. Therefore, it would appear that their only role (aside from their JCS advisory function) would be to organize, equip and train forces for assignment to operational commands. However, Colonel Legere says the services would continue to be "suppliers of trained people and material." Overlapping missions?

(2) So far as naval forces are concerned (and the same may well be true of other services), a persuasive argument can be made, for example, for including an antisubmarine warfare capability (with air, surface and

subsurface elements) in both the Tactical Command and the Continental Defense Command, and probably in the Strategic Command as well. Duplicated hardware?

CAPT. HARVEY B. SEIM, USN
USS *Necosh*
FPO, New York, N. Y.

DEFENSE OF REAR AREAS

● Recently an official letter drew my attention to the article "Life Lines of Survival," in your issue of May 1960. This article discussed the problem of whether supply troops in the army rear area and in the communications zone shall look to their own protection against partisans, or whether special troops must be assigned the task. In view of the German Navy's experience during World War II regarding supply for its bases, which were spread over wide areas of the European coasts, I believe the question cannot be answered merely by "either . . . or." Rather, it will be necessary to plan for both possibilities: that is, "as well as."

The nature of partisan warfare implies that irregulars will appear only separately, and will disperse and assemble for blitz attacks in order then to disappear again. As for the extension of communications lines in a

modern war, it will not be possible permanently to maintain so many troops so that in the rear area and in the communications zone all roads can be protected at the same time. On the contrary, it will be necessary to have placed in certain areas territory-based partisan units to preserve order in the rear area.

Certainly it is useful to bind such units to the territorial military police. Their mission will be to preserve order in the areas assigned them. But this does not relieve the transport columns marching through broad areas from their duty to look to their own protection if partisans are expected to appear on their route of march. For this reason, during World War II, the German Navy had established long-range transport columns in certain theaters threatened by partisans. These transport columns were provided with a certain contingent—however, not too strong—of effective troops charged with protecting the marching units against partisan attacks. But they were strong enough, if adequately concentrated, to force their way through an area occupied by partisans.

The strength of these detachments, with about 800 vehicles of their own, varied between 1,600 and 2,200 men.

The Navy had four of these precious units. The Army and Air Force had none. Each detachment had its own operational successes, and were generally feared by partisans.

Besides these detachments, special partisan-fighter units were stationed with the commanders in army rear areas. These were Army troops; their mission, together with military police, was to fight the partisans in certain limited areas.

From the point of view of the modern NATO combat policy, a double organization of this kind against partisans offers other features:

(1) MP-owned partisan fighter units, in the communications zone attached to the national territorial commander of the host nation; in the operational theater attached to the commanders of the army rear area of the assigned forces.

(2) Long-range transport columns with their own column protection, from those logistical troops of each host nation that remain national.

I trust this information will be of interest to your readers.

CAPT. GUNTHER BANDITT
West German Navy

Hamburg, Ger.

● We suggest the attention of readers to "Rear Area Security: A Job for MPs," by Major Keith L. Monroe, in the July issue.—THE EDITORS.

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PRELUDE TO A DECISION

19 JULY

At his press conference today the President said that in a forthcoming address to the nation and a subsequent message to the Congress, he would make known his decision as to the steps the Administration would take to meet the Berlin crisis. The preceding afternoon the President had met with the Joint Chiefs of Staff and on the afternoon of the press conference he met with the National Security Council. At these sessions the Administration's plans received their final polishing and the remainder of the week was to be spent in clearing them with the other members of the NATO alliance and in preparing cost figures for the Congress.

These were the culminating sessions of drawn-out Administration parleys involving the whole apparatus of U. S. foreign and military policy-making. Various points of view found expression in certain specific recommendations aimed at the Berlin problem, but the whole worldwide gamut of American commitments was also considered. Out of the give-and-take emerged two points of view that were in general agreement but which differed on the degree of military response the nation should take to meet the present crisis and to build for the future. An understanding of the two points of view provides an interesting and instructive lesson in the developing methods of operations of the Administration.

But first, it is important to take note of a vital change in U. S. military policy; a change that has been little appreciated because it came about gradually and without the fanfare that introduced the policy of relying almost solely on "massive retaliation at times and places of our own choosing" which it has replaced.

This new policy—thankfully, it doesn't have a slogan—aims at reducing the degree of military response to the Kremlin to the lowest possible threshold consistent with Free World aims and requirements. It seeks far wider choices in the weapons of response. The new policy and its relation to the old were described clearly, if awkwardly, by Under Secretary of Defense Roswell Gilpatric on 11 July when he said: "We are trying to bring up to a higher state of readiness our non-nuclear forces. We want to give ourselves the option of using either nuclear or non-nuclear. The emphasis now being on conventional is simply to compensate for earlier periods of preparedness where the emphasis was given to nuclear forces . . . *We would like to have more choice.*" (The italics are added.)

It would be inaccurate to say that massive retaliation is dead, but it is most accurate to say that massive retaliation is now recog-

nized as only one of many possible responses.

It was out of this background that there emerged the two alternative, but related, courses of action offered to the President.

One school advocated that the West Berlin situation be met head-on with definite and dramatic increases in our ground, sea and air strength and rapid deployment of additional conventional forces to Europe. This would require the mobilization of some National Guard divisions as well as spare-parts outfits from the Army Reserve. It advocated embarking on a long-range program of beefing up the active Army for the day when the National Guard outfits could be returned to a reserve status. The adherents of this line of action argued that only a large and positive action of this kind would convince Khrushchev that we meant business. And some of its adherents made the additional argument that only such a dramatic response would shake the American people out of their complacency.

The other school of Presidential advisors was not inclined to down-grade the Berlin crisis but it looked upon it as only one of many serious challenges by the Sino-Soviet imperialists in the

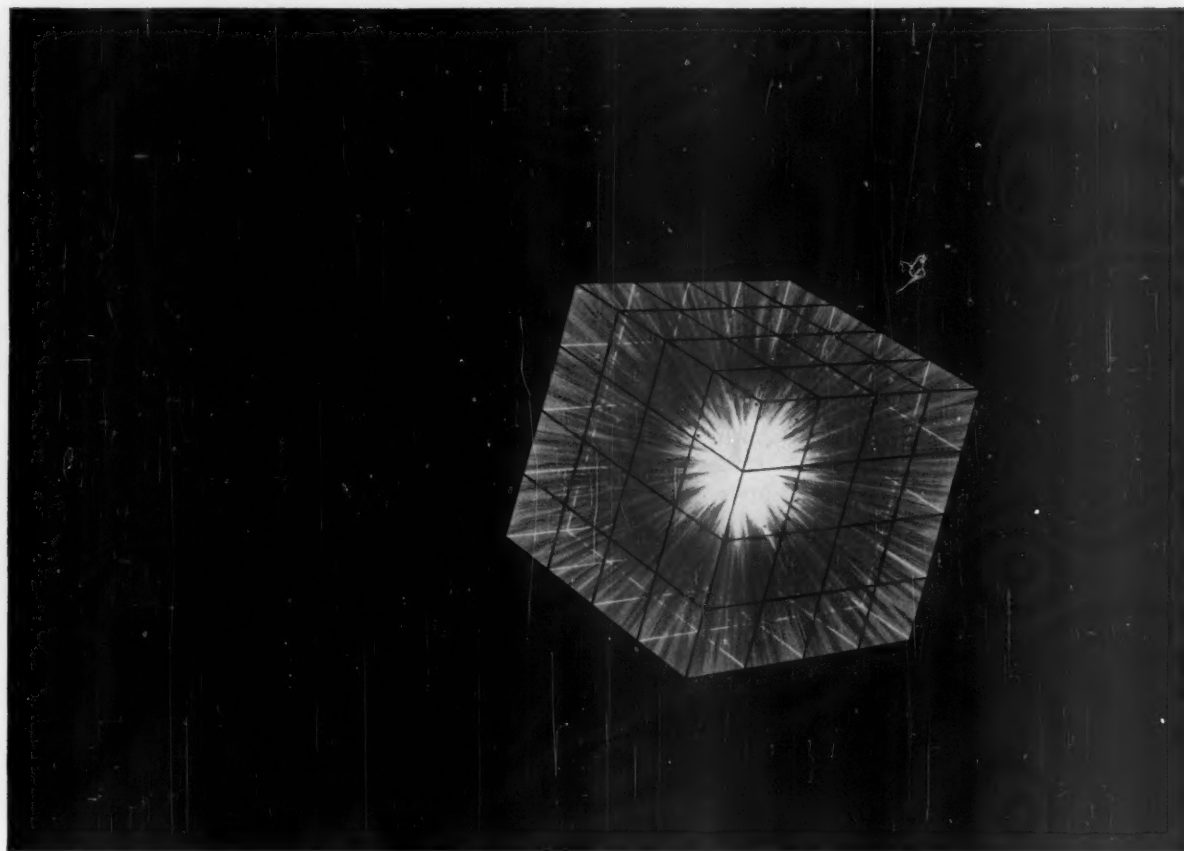


BELEAGUERED CITY. Associated Press-distributed map, based on information of Communist build-up attributed to a West German military source, shows how three rings of East German and Soviet military forces are encircling the city of Berlin

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coming months and years. This group, therefore, advocated building for the long pull, while taking some immediate steps to make U. S. determination clear to Mr. Khrushchev. Instead of a massive mobilization of a million men or so the group advocated minor mobilization of spare-parts outfits to bring all U. S. forces—land, sea and air and whether stationed overseas or in the States—to the fullest possible degree of combat readiness. It would take immediate steps to correct the worst equipment and weapons shortages and it would bring the nation's air and sea lift capacities to a high degree of readiness. At the same time, it would begin to build up a substantial increase in the strength of the nation's conventional capabilities, principally in active Army strength.

The advocates of this point of view were opposed to a crash mobilization of large numbers of reserve components forces because they held that the basic objective was not to impress the American people with the seriousness of the situation but to convince Mr. Khrushchev of Western determination to stand fast in Berlin. It would be highly dangerous, this group held, to confront Mr. Khrushchev with a response that would not permit him to disengage himself from the impossible position he has taken on Berlin with what passes for reasonable grace in Communist circles.

This school also argued that there could be unfortunate reactions to emergency mobilization if nothing happened in Berlin. It is up to Mr. Khrushchev or his East German stooges, it pointed out, to breach the peace by halting Western traffic between the city and West Germany. If this doesn't happen, domestic political reactions to the emergency mobilization could boil over in angry denunciations of waste of money and manpower. To this the other school replied that the mobilization would have been the evidence Khrushchev needed to call off his plans to challenge Western rights in Berlin and to have "nothing



Advice for a President. Gen. Maxwell D. Taylor returns to active duty to advise the Commander in Chief on military and intelligence matters

happen" was the object of the exercise.

These were the choices given to the President by his advisors. His decision is now known to the reader and if it was some combination of the two, as it well may have been, the President at least was given the full treatment and all possible alternatives in coming to grips with the problem.

RANDOM REVIEW

BACHELOR SOLDIERS, officer and enlisted, have had an extra 12 months tacked onto their normal overseas tours in Hawaii and 11 European countries. ● **LONG RANGE Reconnaissance Patrol** companies got more emphasis in Europe when Seventh Army issued a call for crack combat types, officer and enlisted, with emphasis on airborne and communications qualified men. ● **ARMY SPORTS PARACHUTE** team recruiting top-qualified jumpers for sports parachute team at Bragg. Purpose is to form nucleus of highly skilled skydivers to show in exhibitions, demonstrations, national and international meets. ● **MATS AUTHORITIES** at McGuire AFB, N.J., warn of critical billeting shortage if outbound passengers arrive more than 24 hours before scheduled departure. Billeting will be on a space-available basis for

early arrivals. ● **BROOKE ARMY Medical Center**, Texas, has dedicated the Army's first heliport designed as a base for helicopter ambulances. ● **ITALY**, with 698, leads all other Allied countries sending students to Army Ordnance Guided Missile School. West Germany second, with 211 of the 1500 foreign students who have completed training since the international weapons program started in 1957. ● **UPGRADES** for Army enlisted men off by nearly 2000 for month of August with even tougher days ahead indicated for promotions above E-4. Many MOS's still on "frozen" list. ● **EXCEPTIONAL Civilian Service Award** presented to Dr. Edward Whiting, Deputy Assistant Secretary of the Army for R&D, by Army Secretary Stahr. ● **RAY S. MILLER**, long-time civilian employee at Benning, presented with Commendation for Meritorious Civilian Service upon retirement after 37 years. A weapons expert, Miller's many contributions to Army weapons systems may have saved Army up to \$100 million. Miller built Army's first high-speed tank, designed M1 rifle grenade-launcher and at the age of 10 patented a rail joint still used by American railroads.

REPORT ON POST EXCHANGES

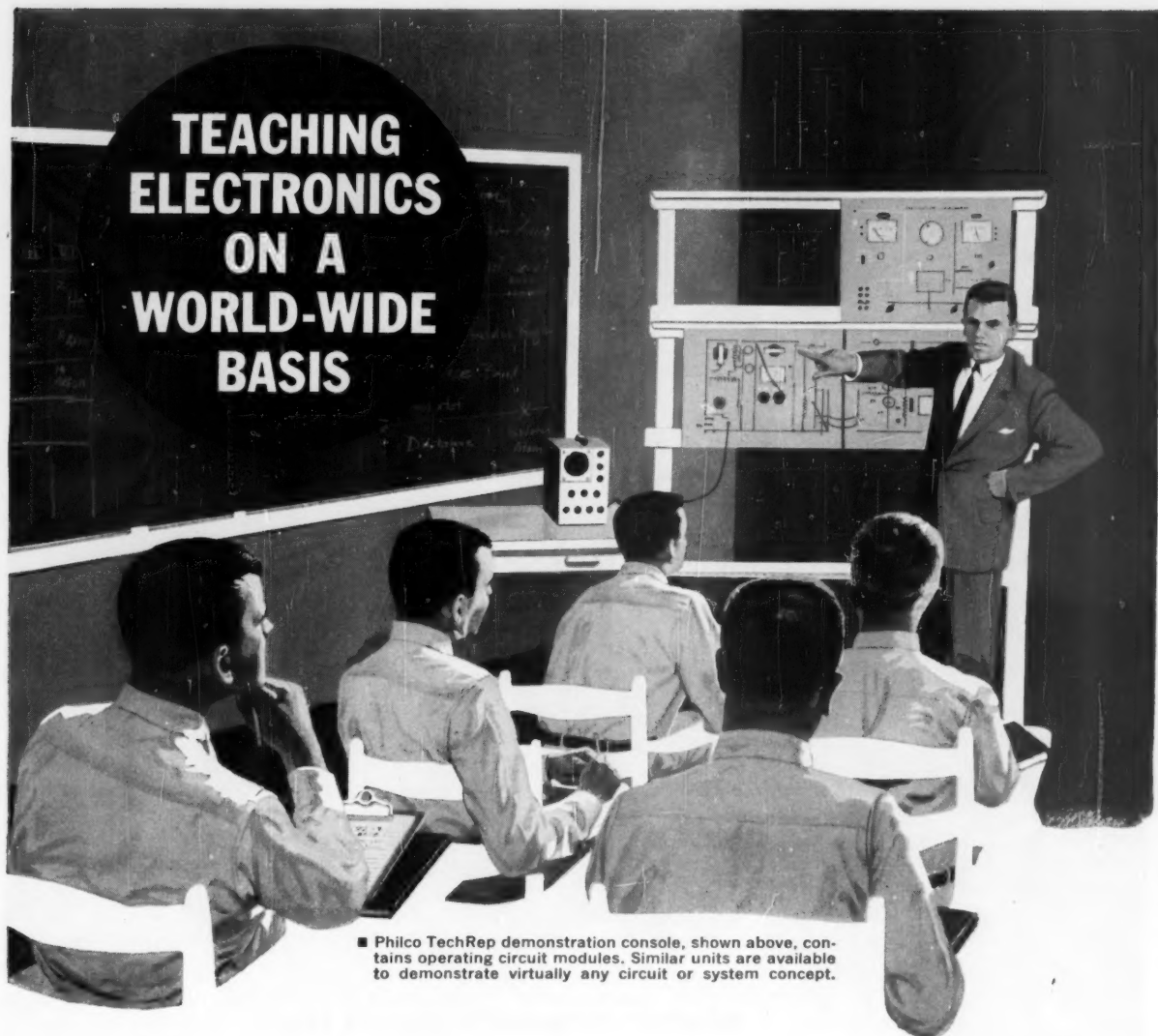
Major General Ray J. Laux, chief of the Army and Air Force Exchange Service, plans more convenient shopping hours in the world-wide soldier stores.

"We feel that our service should be brought to the soldier and not require him to drive long distances to open shopping centers, some of which are as much as 26 miles from his post," General Laux said. The PX chief added that "to the extent they will be needed" military personnel will be hired for post exchange jobs during their off-duty hours.

Commenting on threatened PX price boosts, General Laux said that this would be occasioned by increased labor costs as are influenced by local environment and wage scales. "We have to com-

(Continued on page 66)

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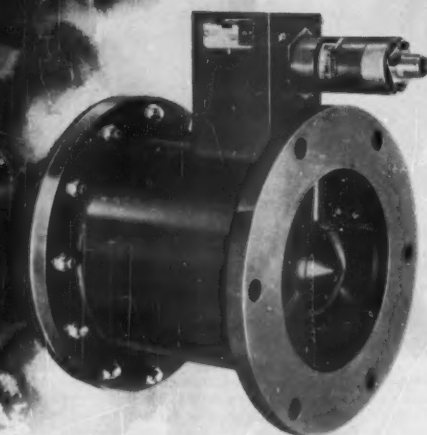
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Major General Ralph M. Osborne,
U.S. Commander in Berlin



Brig. General Charles E. Johnson,
Tactical Commander in Berlin

Berlin Command:

Captain ROBERT B. ASPREY

THE U.S. Army garrison in West Berlin is a political-military outpost unique among the ubiquitous units of the United States armed forces. Called Berlin Command, it falls under the tactical command of Brigadier General Charles E. Johnson, a 50-year-old combat veteran of World War II and Korea. Johnson reports for tactical missions directly to the U.S. Commander in Berlin, Major General Ralph M. Osborne, who occupies a two-hat role as our senior military and political representative responsible, respectively, to Commander-in-Chief, U.S. Army, Europe, in Heidelberg, and to the U.S. Ambassador, in Bonn.

Comprising some 4,000 American soldiers, Berlin Command includes a headquarters which directs both the tactical forces and the area command or logistical functions, two infantry battle groups, a reinforced company of armor, a station hospital, and miscellaneous special troops including military police, engineer, and signal units, and a band. Administratively, the Command is charged with three major tasks: it keeps house for the 9,000 official members of the American community in Berlin; it furnishes a 45-man guard

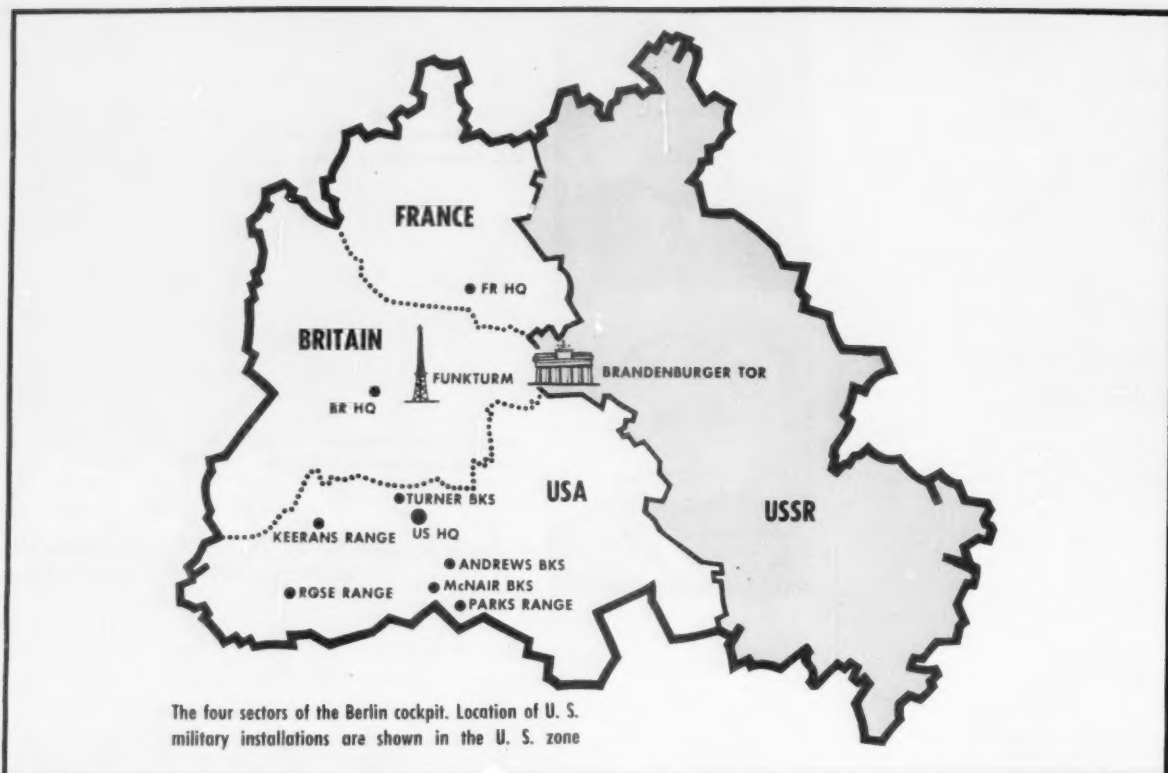
detail three months of each year to Spandau Prison, an establishment built to hold 400 criminals but one now housing Germany's last three prominent war criminals: Rudolf Hess, Albert Speer and Baldur von Schirach; and it operates the rail and highway facilities connecting Berlin to the free world.

Psychologically, Berlin Command must demonstrate a military posture of combat readiness yet, through conduct and appearance, show the American soldier at his best. This mission explains both the splendid appearance of our troops—the result of the unusual training emphasizing smartness in ceremonies and appearance—and, coupled with the isolated environment, the rather difficult disciplinary problem we will mention later.

Tactical mission

Tactically, Berlin Command is to reinforce local police in the protection of American lives and property in case of civil disorder; if it comes to all-out war, the mission is to defend West Berlin to the last man. Sharing the task are about 5,000 British and French troops and, as the spearhead

TACTICAL



of the Allied forces, about 12,000 West Berlin police.

Unfortunately, the Allied force is equipped with neither organic artillery nor combat aircraft, yet is encircled by at least 20 Soviet atomic-armed divisions plus some six East German Army divisions of varying capabilities. Worse still, withdrawal is out of the question: the only practicable route to friendly territory is an Autobahn that stretches 110 miles through enemy-garrisoned country!

In any war but one, such a tactical situation would be ludicrous. The exception is the cold war that has raged between the Soviet Union and the West since 1946. Had Allied forces not occupied Berlin the communists would have succeeded in any of their numerous postwar attempts to take over; without Allied forces the Berlin Airlift could never have succeeded; but for Allied forces demonstrations such as the 1950 *Deutschland Treffen* (a communist youth invasion of West Berlin that failed when faced by prompt Allied action) would be the order of the day. Splendid as has been the enduring spirit of West Berlin's two and a quarter million citizens, their continued liberty has depended, and does today depend, upon the presence of the Allies in their city—a fact that they are the first to proclaim.

As a result this strategic child born out of wedlock to democratic and totalitarian parents

has grown into a human symbol of dignity and freedom, a living vital force that stands in fantastic contrast to the other orphans surrounding her. A symbol of hope to millions of satellite and Russian peoples, this vast, incredibly prosperous city constantly puts the lie to Kremlin propaganda—indeed makes all mention of “decadent capitalism” a rather poor joke. A gauge of her influence may be gathered from the 3.3 million East Germans who have escaped to the West



During a problem in the Grünewald training area, 6th Infantry soldiers maintain radio contact

since 1946 or from the hundreds of thousands who, despite stringent secret police control, visit her theaters, art galleries and food markets each year.

As a showplace of democracy inside a communist-controlled area, then, West Berlin is well worth any effort to maintain. Add to this benefit the treaty right of our being here, the value of the city as a listening post and, finally, a moral obligation to her citizens, and it should be clear why we are willing to undertake a calculated risk of this magnitude.

From a military standpoint, is the risk practical?

The defensive potential

In case of general war, so our thinking goes, the powerful Soviet armies surrounding Berlin would aim for West Germany and other NATO land targets rather than for Berlin. Nor, considering Berlin's importance as a communications center to future Soviet troop movements, would she be reduced atomically. Her capture probably would be the mission of either Soviet reserve forces or the East German Army.

Whatever would transpire, the Allied tactical mission is to hold out as long as possible while inflicting maximum damage. A direct attack by Soviet forces could probably take Berlin in two or three days, but of course this would weaken or delay her major strike against the West and thus would aid NATO forces elsewhere. An attack by Soviet reserve forces would take longer to mount, much longer to succeed and, again, would aid the NATO effort by disrupting replacement strength to the enemy striking force. It is estimated that an attack by the East German Army alone would require at least two weeks or more, under the most favorable conditions for the aggressor. This could result in severe embarrassment if these divisions are as shaky as most observers believe.

Although the defensive picture looks gloomy, the defender can give far more than his numbers indicate. Remember that in 1945 some 50,000 German troops, part of whom were fanatical SS units but on the whole a disorganized, already defeated army, held out for eight days against an overwhelmingly powerful Red Army. The physical area of Berlin played a major role in this defense. This is an enormous city of 340 square miles (or larger than the District of Columbia, Alexandria and Arlington combined) with a generous share of lakes and forests, two rivers, and several canals. West Berlin, 180 square miles, is heavily built-up, which means that an aggressor must resort to hand-to-hand, building-to-building fighting while deriving minimum value from either artillery or armor. If an Allied force makes a determined defense—and this is pledged—at least



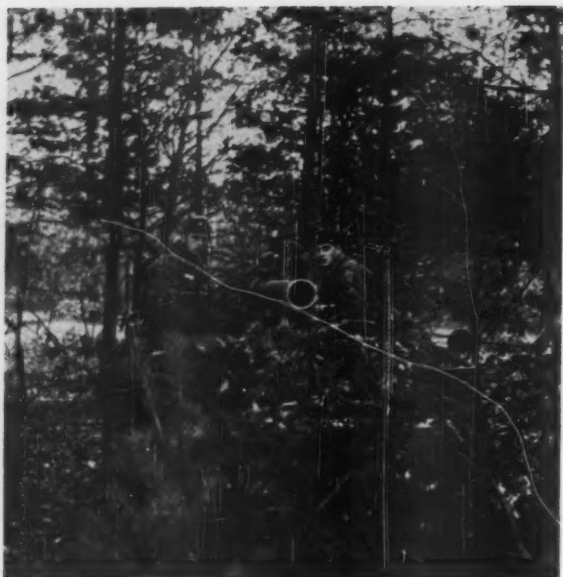
Live fire is stressed for 6th Infantry shock troops who must stay on round-the-clock ready



The ammo is live as Berlin-posted troopers fire on a range somewhere in West Germany



Masks are worn during FTX. Night problems and alerts at odd hours keep Berlin Command troopers ready



106mm recoilless rifle gives antiarmor punch



Constant training goes on in West Berlin's Grünewald

Soldiers man vehicles during practice alerts



considerable strength must be thrown against it. This means mass, and mass in turn means profitable targets for Allied atomic missile and air strikes.

Despite such hazards to the aggressor there is little doubt that in the event of war the enemy will attack West Berlin and eventually will conquer it.

The riot potential

But another contingency looms even more sharply: the insidious attempt to subvert control of West Berlin by well-organized riots, the sort of action in which the agitation-propaganda (Agit-prop) experts of the Kremlin excel.

The riot potential in Berlin is particularly grim. Besides its National People's Army of 110,000 regular troops, plus nearly 200,000 reservists, and the so-called regular or People's Police of 78,000, East Germany maintains a Border Police of from 40,000 to 50,000 and an Alert Police of 30,000. The East German Communist Party (SED) also has formed factory "battle groups" comprising more than 300,000 members who undergo political and military instruction by trained officers. To quote from a recent article by Adalbert Weinstein, one of West Germany's best military analysts, the 30,000 troops of the para-military Alert Police "are commanded by one Colonel Mansfeld, who has 10 alert groups, plus the special 'Berlin Watch Regiment.' This regiment is composed of four battalions plus a special 'Berlin Battle Battalion.' Armed with machine pistols and carbines, street-fighting weapons, these civil war specialists also have special rocket weapons, armored personnel carriers, 'water-throwers' and T-34 tanks. . . . The several hundred thousand workers incorporated into the 'battle groups' of the SED are a kind of factory militia. In a large city like Berlin, their role in inciting a state of civil war should not be underestimated."

Berlin Command has not underestimated. Faced with the primary defense of the American sector—81 square miles including one million persons and bordered on the east and south by the potential enemy—the U.S. Army through the years has evolved its present tactical organization of two battle groups plus support troops, a force according to General Osborne that is the absolute minimum for the assigned missions.

To best train for his tactical responsibility, General Johnson initially assigned to one battle group the primary mission of city fighting, and to the other, riot control. After each group mastered its mission, the responsibility was reversed. "The result," according to Colonel Harold B. Ayres, CO of the 2d Battle Group, 6th Infantry, "is an extremely versatile force skilled in each of these highly specialized forms of warfare."



In joint British-American exercises British and Yanks engage in combat-in-cities problem

Although each type of fighting has its peculiarities, certain factors are common. While various intelligence means are employed to keep the pulse of the East under study, physical reconnaissance of the sector is the first general requirement. "We literally must know each foot of the American sector," explained Colonel Tobias R. Philbin, Jr., commanding the 3d Battle Group, 6th Infantry. "Once an alert sounds there is no time to look for the shortest or most advantageous route to the trouble spot nor to study the spot when we get there. This has to be known beforehand. We start our people out on scale models of the sector, then graduate them to the actual street and building complexes. Before long they know every intersection, cul-de-sac and strongpoint, and they know these in the darkness as well as in the daylight."

The training scheme

Many unit plans for either mission have been drawn and are constantly redrawn. These include plans for fighting in conjunction with the West Berlin police, plans for fighting alone, and plans

for fighting along with the other Allied forces. Constant study also has resulted in certain changes in the normal battle group table of organization: there is no direct artillery support, although this is a result of custom through the years rather than design; in the reconnaissance platoon, an extra scout section with jeeps mounting machine guns has been substituted for the support squad; 106mm recoilless rifles have been mounted on jeeps instead of tanks; three-quarter-ton trucks with machine-gun mounts have been substituted for the armored personnel carriers which are pooled; in the assault weapons platoon, five M48 tanks have replaced the normal five SS-10s; extra supply and maintenance personnel have been added to the battle groups in lieu of normal division back-up.

The major maneuver area for these units is Berlin's large forested park, the beautiful Grunewald, where combined exercises are frequently carried out with British and French units. But neither here nor elsewhere in West Berlin is live firing permitted. This means that for actual practice the rifleman is restricted to caliber .22 and .30



Knowledge of house-to-house fighting is essential

Copter-borne troops assault roof of strongpoint

Armor participates in combat-in-cities training

Sandbags and simulated prisoners give air of grim reality to the training for defense of Berlin

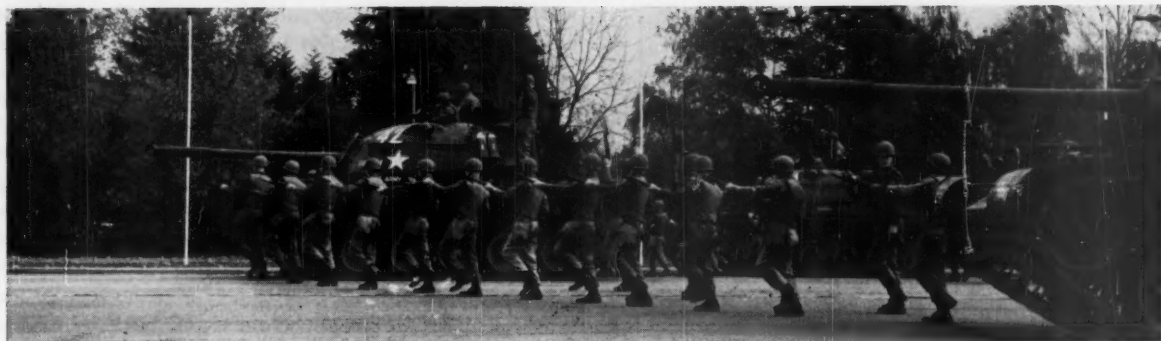


known-distance ranges while assault-gun and armor crews must be content with subcaliber ranges for firing the 106mm recoilless rifle, 4.2 mortar, and 90mm tank gun.

To overcome this important deficiency, each year the battle groups are rotated by echelons to Wildflecken in West Germany for nine weeks of rigorous field training. Similarly, the assault gun platoons and armor units are sent to live-fire ranges at Bergen-Hohne.

Although city fighting is included in U.S. Army basic training, it is not concentrated upon. And, as any veteran of this form of warfare knows, no city is quite like another. To answer the challenges peculiar to West Berlin, Berlin Command has constructed a small section of a city at another of its main training areas, Parks Range. Here just about every strongpoint that exists in the American sector of West Berlin has been duplicated and makes for extraordinarily realistic combat training. One day a unit may be required to attack a strongpoint, then occupy and defend it. The next day the same outfit may have to defend against massive joint infantry-armor assaults. British and French units often cooperate in these exercises which, whenever possible, utilize aggressor forces, umpire control, and thorough critiques.





Perfect coordination between infantry troops and armored vehicles spells confusion to would-be rioters in Berlin

Riot control, although employing basic infantry combat tactics of concentration of force, mass, penetration and exploitation, calls for a different type of training than city fighting and a type even less stressed in the soldier's basic training. To the Allied forces in Berlin riot control is not a police matter but a military affair. Our forces will be ordered in only when local authorities cannot or will not adequately protect national property or lives. Thus, when a demonstration or a riot threatens the national position, the threat will be met with military forces employing military weapons and tactics.

The squad is the basic unit for all riot control

Adapted for use with bayonet, 12 gauge shotgun is extremely effective weapon for riot control



In training, soldiers "ham it up" as riot mob

formations. Consisting of 11 men, it is divided into Alfa and Bravo teams of five men each. The M1 rifle with bayonet is the standard arm, but each team carries one "shotgunner" armed with a 12-gauge shotgun adapted to hold a bayonet. The squad leader is armed with a grenade launcher and billy plus rifle and bayonet, and the Bravo team leader carries pistol, billy, and grenade chest-pack.

Three such squads constitute a platoon whose leader is armed with a carbine. Platoon headquarters comprises a platoon sergeant with M1 rifle and grenade launcher, a radioman with PRC-10 radio and pistol, an automatic-rifle man, a soldier equipped with a portable gas dispenser, and a sniper armed with the M1c rifle. This platoon may be augmented by one or more weapons squads from the rifle company's assault weapons platoon, and it may be reinforced by armor units or have helicopter support.

Riot-control tactics

Perhaps the best way to grasp the unit picture is to see a company in action. In no more than 20 minutes after an alert is flashed the company is en route in vehicles to the trouble area. If the riot is a small one it may be followed by only one



In riot control, precision by a few brings confusion to many

additional company, units of which are used to safeguard the main line of communications, usually important intersections where barbed-wire obstacles are thrown up and armor and foot patrols employed.

The riot control company, or main formation, dismounts out of sight of the mob and moves into company formation, the troops fixing bayonets and locking and loading weapons. In column formation the company advances to within sight of the mob and is halted, two platoons forward, one in close support.

While the company is ordered to high port the commander, through a German policeman, tells the mob what he wants them to do—break up and go home. For this a portable, hand-operated public address system may be employed or, for larger mobs, a vehicular public-address system or PA-carrying helicopters. If the mob does not disperse in a stated time, the commander must exert military force gradually.

Assuming that the mission is to clear a particular area, the commander orders his troops into line formation. Keeping their weapons at high port they assume this formation on the double. Then, they are brought to on guard and immedi-

ately go into the step-jab advance. In this advance the rifle is thrust forward approximately three inches each time the left foot advances six inches, a simultaneous line movement performed in slow cadence. Depending on the density of the crowd and its responsiveness, the commander may now employ chemical agents but not before sounding a pre-arranged signal for his troops to don masks.

Suppose that in the resultant confusion one portion of the mob breaks through the left flank. Now the commander calls on his reserve platoon which uses the wedge formation to restore the position. The helicopter radios that large-scale reinforcements are moving up to the trouble zone, so the commander hastily radios for them to join him.

Suddenly one of the mob fires. The commander fires a pre-arranged rocket signal warning his troops that ball ammunition will be used, then orders his selected marksmen to open fire. If this fails to break up the mob, he must gradually increase his firepower until his mission is accomplished or until he is forced to withdraw.

As foreign—perhaps repugnant would be a better word—as riot control may seem to the inexperienced, it becomes a very real necessity when subversive forces are at work. Since 1945 both British and French forces have had to cope with it repeatedly in such places as India, Egypt, Algeria, Cyprus and Israel. For years the Soviet leaders have relied on the psychological value of mob actions, and their Agitprop teachings in this form of warfare are thorough and exact.

So diversified are the various types of mob actions that counter-moves must necessarily remain flexible. New devices are constantly evolved and evaluated. One day red-dye spray may be tried that is harmless but difficult to eradicate. It induces an adverse moral effect in the demonstrator, and it marks him in case his arrest is later sought. For swift penetrations of mobs, armored cars rigged with electrically charged



Berlin Command soldiers simulate rioters and are dosed with simulated tear gas of talcum



When mob fails to heed warning and disperse, helicopters deliver clincher in tear gas

"fences" have been tried; to break up the rear of a mob special tear-gas dispensers have been fitted to helicopters. The rifle squad's "shotgunners" resulted from a need to cover breaches in a formation or to fire at selected targets when minimum casualties are desired. Because communist tactics place ringleaders and selected sharpshooters at the rear of the mob or in buildings, the sniper has been placed in platoon headquarters where he can direct immediate and accurate fire if necessary. The officers of Berlin Command are the first to admit that they don't know all the answers attendant to riot control. Most agree, however, that the onus of the job rests on the individual soldier acting in disciplined and intelligent harmony with his unit.

The individual soldier has been trained to his Berlin task under certain disadvantages. As one officer remarked, "We are asking the troops on the one hand to be always rough, tough and ready; on the other hand we are insisting that they make Berlin Command the smartest military garrison in the world." Certainly maximum training is the order of the day and so is maximum duty. The alert requirement means that 50 per cent of the tactical force must be kept on duty while 85 per cent must be kept in Berlin, a relatively isolated area where a three-day pass means nothing in so far as being able to visit West Germany.

Discipline and morale

The two factors of maximum training and isolation contribute to continuing possibilities of a high disciplinary incident rate in Berlin Command. Holding down this rate today is one of General Johnson's major worries. "If a soldier is drunk or disorderly in Columbus, Georgia, or even in Frankfurt, Germany, it is a serious matter but probably won't make the front page. But if this happens in Berlin, it is apt to become international news or, at the least, propaganda material for the East German press. As a result we must use every means including increased strength of MPs to catch the offender. No offense may be glossed over—it must be reported, it must be dealt with!"

During the past several months General Johnson has achieved a significant decrease in the incident rate by stressing increased troop instruction—explaining to the soldier why he is in Berlin. To lower it further, a screening of enlisted men prior to their assignment to his command has been recently effected (officers have been screened for some time), a move he believes cannot help but pay off.

To compensate for the isolation and heavy duty, the soldier is encouraged to take maximum leave and when in Berlin to make his barracks



Rifle and shotgun are effective control weapons. Bayonets held throat high menace advancing mob

life as comfortable as possible. By using unit funds and talents most outfits have decorated their dayrooms and messhalls in a variety of ingenious ways while every possible recreational facility has been furnished the troops. Yet a soldier cannot be expected to spend all his time in barracks, and when he goes to the city, especially the tense, polyglot yet hurly-burly city of Berlin, there is always the chance he will run into trouble.

But to compare this trouble with the job he is doing, is to find the value of performance so greatly outweighing the damage that any comparison becomes nonsensical. Aware that the alert may sound at any moment, realizing that in the event of general war he will pay the extreme price, the Berlin combat soldier nonetheless knows and appreciates that in large part it has been his determined presence in West Berlin that so far has kept the peace.

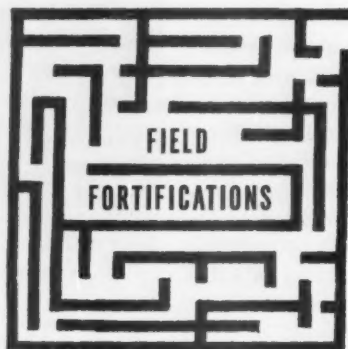
Down off his soapbox comes riot ringleader arrested by soldiers wearing body armor



The futility of foxholes that can't be fought from

Lt. Col. CHARLES R. CAWTHON

STUDY of the craft of field fortification, as practiced in combat, led me to the discovery of certain characteristics that are constant and deserve fuller consideration. I have not reduced them to formulas because I have found they are understood when expressed informally:



- In the absence of on-the-spot direction, the average soldier prepares a position which affords shelter first, fighting potential second. Often, this proclivity is carried to the extreme that his position cannot be fought from at all.

- Rarely do two soldiers—to say nothing of two outfits—agree on the site or the construction. The layout of a position prepared by one occupant is maintained unchanged by a subsequent tenant only through direct command action.

- In a small-unit position field fortifications are expanded rapidly in size and complexity with the aim of meeting every possible contingency—even highly unlikely ones. The result is a proliferation of bunkers, trenches, wire and mine obstacles, to the extent that they can be neither adequately defended nor maintained by the force that constructed them.

- The characteristics I have mentioned combine to form another: devastation of the area by pick and shovel to the extent that it constitutes an obstacle to the defender's mobility.

- In easy soil, a position is dug so deep that its defender is in a pit of the type used to trap animals. In hard soil, positions tend to remain barely scratched into the surface.

- Little attention is given to the fact that water seeks its own level and rain water will drain into holes unless common-sense steps are taken to prevent it.

As an example of the wholesale preparation of positions that cannot be fought from, I cite the type of foxhole that was common during the Normandy campaign. They were scalloped out at the bases of the hedgerows as the battle moved across the *bocage* country. As passive measures of shelter they had some merit, but for fighting they were largely useless. Being flush against an embankment to the front, the only fields of fire they afforded were to the rear and upward. Only rarely could one be found with a firing port cut

through the embankment at ground level so that the rifleman could fire on the enemy from cover. Without such an elementary adjunct in his fighting position, the rifleman had to rise from his foxhole to fire over the top of the embankment, leaving his back exposed to mortar fire or grenades.

The alternative was to remain passive in his foxhole—a fish in a barrel—while an attack rolled over his position.

Fortunately, German attacks were not frequent in Normandy, but I recall finding American dead just outside their foxholes. (I saw even more Germans, who followed the same faulty practice in field works once they had been pushed out of their pre-invasion positions.) The majority, I believe, were victims of prepared positions which they had to vacate in order to fight. In effect, they had dug graves, rather than fighting positions.

An example of the ultimate in battlefield devastation, to the extent of halting mobility, is that of the Somme drive during World War I. Contemporary photographs show that not all the monumental earth-turning, which resulted in a pig-sty morass, was done by artillery barrages and mines. A good part of it was done by pick and shovel. There were miles of trenches, crisscrossing and running in all directions, and mostly abandoned and falling to pieces.

This tendency to throw up field works in all directions, and as nearly simultaneously as possible, is much older. There is a Civil War account of a Union division that entrenched to meet a reported Confederate threat. No sooner was the trench finished than the threat was reported from another direction. The result was still another division-length trench. Finally, word came that the whole thing was a mistake. Thereupon the division assembled and marched away, leaving three lines of entrenchments running in three directions. Had the attack materialized, presumably only one, or two at most, of these trenches could have been manned adequately, leaving the third open to any use the usually enterprising Confederates might choose to make of it.

The front in Korea during the "static" period of 1951-52 is a more recent example of pick-and-shovel devastation in the name of "improving

the position." I have first-hand knowledge (because I was there) of three battalion sectors in which this work went on literally night and day. The usual differing ideas on the layout of the works were expressed by the battalions that relieved each other and resulted in duplication of bunkers and trenches. There appeared, also, the Korean version of the Normandy foxhole in the form of bunkers that could not be fought from because they had no firing ports. These were usually styled "warm-up," "communication" or "mess" bunkers, but the enemy failed to honor the fine distinctions.

This constant changing of field works resulted in vegetation becoming stripped so that erosion from the monsoon rains took full effect. At the same time, of course, all natural camouflage was destroyed. The outcome, I believe, was that the cease-fire found the positions little, if any, stronger than when they were first constructed, despite all the sweat expended on them.

BATTLE, in which both sides possess tactical nuclear weapons, can now be extrapolated only. But almost certainly it will not involve the continuous lines of the Somme or those of the static period in Korea. On the other hand, we can form a reasonable conjecture of tactical nuclear warfare from one aspect of the Normandy campaign. This aspect was the reaction of the Germans to our overwhelming artillery, mortar and air support that could be concentrated to the point of providing a reasonable facsimile of a minimum-yield tactical nuclear weapon. I don't think battle lines in modern war have ever been consistently so close as they were in Normandy. The German infantry seemed determined that no more than one hedge-inclosed field would separate them from our lines. POWs were questioned about this affinity for such lethal company. They stated that it was due not so much to Hitler's order against yielding ground as it was for protection against our artillery and air which, because of the configuration of the hedgerow country, could not be brought in close enough to reach them one field away.

It seems reasonable to forecast that when future combat is joined, each side will act on the assumption that it has a bear by the tail and will not pull back to become a target for a nuclear strike. The issue, once joined, will be decided at close quarters and on the spot. The side that indiscriminately prepares positions and leaves them unoccupied can expect an attacking enemy to move in and take them over. Unoccupied field works in World War I and in Korea were so used. Both instances demonstrated that nothing is more difficult than evicting a determined enemy from cover conveniently prepared for him in your midst. These are lessons we must not overlook;

I believe they will apply if tactical nuclear weapons are employed in battle.

Again, "shellproofs"—deep dugouts in which the World War I doughboy took shelter only to be killed by grenading parties—foxholes in Normandy that had no fields of fire toward the enemy, and bunkers in Korea that had no firing ports, all these proved equally efficient, self-made tombs.

WE have developed a new mechanical digger for rapidly preparing positions behind the line of contact, and out of observation of the enemy. But I believe that the hand intrenching tool, driven by muscle power, will remain the No. 1 implement for the front-line soldier who is in contact with the enemy, and protected by distance from his tactical nuclear weapons. The soldier's dislike of advertising his location—which can extend to hesitancy in firing his weapon—seems to preclude digging instruments noisier than the pick and the shovel. I saw a demonstration of this during the course of the Omaha Beach action. Here the proposed intrenching aid was a quarter-pound block of TNT the assault infantryman carried ashore to assist in preparing his position quickly on the D-day objective.

During the night of 6-7 June 1944 there were many disturbing noises on the beachhead. I believe none of them came from the use of TNT in preparing foxholes; certainly none was used by the remnants of my company. Aside from the soldier's disinclination on that occasion to call attention to his exact location by exploding TNT, a steady resupply would have been required to keep up with the changes in positions.

It seems to me a contested airhead of the future will develop a similar situation. When close under the enemy's guns, the soldier will continue through his own choice to dig in with hand-intrenching tool; or, as was often done during the Civil War, with mess gear, sharp stick, and even bare hands.

If I were a commander directing this activity, I would exert my utmost in direct supervision to see that every position being prepared could be fought from, and in the most logical direction at the least. Further, I would see that any prepared position that could not be manned be rendered untenable. During the close and violent phases of infantry combat—which I believe will mark the era of tactical nuclear weapons—any undefended field work will become a happy haven for an attacking enemy. Under such conditions, an unoccupied "alternate" or "supplemental" position had best be considered as "alternate" and "supplemental" for the enemy as well as for ourselves.

I think these two principles, firmly enforced, offer a sound basis for field fortifications that are just that and not self-made deadfalls.



Col. JOSEPH MOBUTU

BLACK SOLDIER'S BURDEN



Col. MICHEL KIEMBE

As its Army goes, so goes the Congo

By Brig. Gen. S. L. A. MARSHALL

● For anyone interested in the nature of armies and their role in the advance of civilization, today's Congo is the most perfect of all laboratories, if only because the high cost of doing everything the wrong way was never anywhere more beautifully illuminated.

I recently returned from a 30-day visit there. The object was to make a study in depth of the new republic's problems. Of necessity, that encompassed the fields of public health, education, government financing, the general economy, public administration, law and order, communications and politics.

The maneuverings of such men as Mobutu, Kasavubu, Gizenga and Tshombe capture most of the headlines; as the past year has shown, the prospect that the dissidents can be put down and a true political unity will emerge on a broad national basis is extremely remote. Regional separatism and tribalism is ingrained in these men.

But even should this psychological roadblock be overcome tomorrow, the problems of the Congo would remain mountainous. Trade and commerce are paralyzed. Among Congolese who worked for pay one year ago, 65 per cent are jobless and depend for food on the tribes. Public health wobbles on a knife-edge, with less than 150 doctors and medical technicians to attend 14,000,000 in a jungle where plague ever threatens. Main highways have become impassable for lack of maintenance. Rail lines in the interior are periodically ripped up by marauding tribesmen. Schools are about half-filled, with unlettered Congolese taking over the teaching. Public administration has so far deteriorated that all revenues collected by the government are insufficient to meet the payroll of the small army. The Congo franc, officially worth 50 to the dollar, is 115 on the black market. In the last year of Belgian rule the Congo exported \$1.3 billion worth of goods to the world, which gave it a highly favorable trade balance. Imports and exports now run about even at a rate of \$4 million per month.

No nation on earth ever ran downhill as rapidly as this one. As for recovery, it will take years, the

help of thousands of technicians brought in from the outside, and economic aid running in the billions to revitalize the economy and afford the Congo a chance to stand alone. Educationally, the Congo is only one notch above jungle level. Not one person now in power is a member of the learned professions. The first handful of college graduates are now available for replacement. The flow over the next five years will supply only 200 or so.

Where must reform begin?

As someone has well said, today's Congo is a twin phenomenon: a government which does not govern served by an army which is not commanded. Stating the case clearly, if brutally, that description also implies the key answer to the all-important question: when all things are in such total disarray, where must reform begin?

Fundamentally, the great blight is due to the failure of military force and the lack of military control. There is no law and order in the Congo. There are pockets of misbehavior and lawlessness all over the countryside just as there are oases of workaday calm and productiveness. The forces which nominally should restrain disorder have compounded it by recurrently exercising authority and weapons capriciously and harshly. So the people are disquieted, fear-filled and waiting, but not for the most part working. The miasma of fear, more than the measure of violence, has paralyzed industry and stopped trade. It has happened because two armies, for quite different reasons, proved incapable of carrying out their assigned missions.

The best to be said of United Nations forces is that they have been partially effective in keeping a bad situation from becoming worse. They have not reestablished public order; nor can they do so. The country is too vast, UN's forces are too thin. Besides, the UN presence is itself a contributor to tension in the streets and to public loss of confidence in the ability of an independent Congo to run its own affairs. No city may have peace of mind when riflemen cover all hotels and main

intersections and armored cars careen through traffic at high speed. Things might have worked out better if the UN army, boldly and imaginatively commanded, had tried to work hand-in-hand with the Army National Congolese (ANC) while schooling them to more soldierly standards. But it has been handicapped throughout by timid and reclusive policies, and its people, especially those stationed in the more remote outposts, erode rapidly due to jungle-fear and extreme isolation. In this, the African contingents fare no better than the Europeans.

Only the Congolese Army, which started this debacle, may be made the instrument for ending it. But it will have to be reconstituted from the ground up, and its officer corps must be taught command, which it understands not at all. The Congolese can't bring off any such reform themselves; leaders like Mobutu and Kiembe are the first to say so. In the interim of reform, the Army will need to be officered from the outside. Unless help is provided in these directions, the Congo will remain an invalid indefinitely, for it is basic that until the Army can exercise police power, there cannot be public order, and without it, commerce and industry will continue to wither away.

The aberration of the UNC

Not only do United Nations people shun the Congolese Army but their military have not yet attempted to analyze its problems from a professional view. In the whole Congo situation, there is no aberration stranger than this one. Yet UN headquarters in Leopoldville, the various em-

bassies and all qualified observers agree that if reconstruction is to be achieved, military reform is the logical starting point. There is no longer any thought of disarming and demobilizing the ANC. Disunified and unresponsive though it may be, it still is more united and working together than anything else in the Congo. Whereas the political chiefs and their followings think regionally and tribally, only the men of the old Force Publique were schooled and trained by the Belgians to serve with loyalty to the Congo as a whole and were made to serve far distant from the tribal environment.

Although the American press continues to describe the ANC as an "army of 25,000" it now counts less than one-third that number. The other battalions had to be broken and dispersed because they "effervesced" too much following independence. Effervescence is still plentifully present, in a milder, if more extravagant form, with less violence, and more non-regulation reaching for the good life.

Though little of it is good, much has happened to the ANC since last July when a small and initially isolated garrison mutiny at Thysville triggered the violence which in the year since has delivered the Congo into political chaos and economic collapse. But while the original sin is well remembered, the attendant circumstances are almost forgotten.

On 4 July last year, Lieutenant General Emil Janssens, who commanded the Force Publique, attended an American birthday party and boasted: "That Army is my creation. It is absolutely loyal. You will see." That was just four days after independence and only three days before Janssens was sacked for his failure. The Thysville mutiny, which rapidly spread, did him in. Officer stupidity sparked the explosion. Some of the Belgians had taunted their soldiers: "You'll get nothing new out of freedom—the same old pay and we'll still give you orders." That was too much to swallow.

Within five days the mutiny ran wild, destroying everything hopeful in the situation, killing cooperation between the Congolese and the old overlord, putting the Belgians in panic flight, shattering the alliances in the coalition government and precipitating UN intervention. It had been too easily forgotten by a few popinjays that all armies are highly sensitive organizations.

Possibly no better reaction was to be expected of a force mainly illiterate. But dignity is not a monopoly of the privileged. When the Congolese soldiers struck for something better than they had, and discipline collapsed, it had to stay that way because the people with the know-how to maintain it had departed. The question now is whether they can be replaced.

So pay a visit to Camp Leopold, main training



Lt. Gen. SEAN McKEON



European-style arm-swinging is somewhat ragged as Congolese paratroopers pass in review. Occasion, a parade in Leopoldville

base of the ANC, lying between the capital and the Amba Hills, and see what gives with today's Congolese Army. The winding road is much shorter than the distance this force will have to walk to acquire soldierly fitness and become a prop to the new nation.

Freedom to 'live-it-up'

Camp Leopold is a bit of Ghent dropped incongruously into a tropical setting. The stair-step gables and thick stone walls, reminiscent of Flanders, are a monument to the self-gratification of a Flemish general and should last until the Congo freezes over. Large sections of the camp are now unoccupied and the lush, untended tropical foliage rises rankly between the empty buildings. Officers' quarters, modern and styled for as gracious living as anything to be found on a U. S. post, are unoccupied and going gradually to pot. Yet many of the garrison families live off-station in civilian mansions deserted by the Belgians. No one says nay, and this is part of the privilege of living it up under new-found freedom.

UN forces don't see this spectacle. Because of

one minor unpleasant incident months ago, the camp and the nearby Stanley Monument, which overlooks the Congo rapids, are off limits and rated too dangerous for UN personnel. Yet I have motored alone seven times out the highway past the camp, three times by night, and experienced no sweat. The Congolese are not a wantonly cruel or bloodthirsty people; most of their violence seems to be rooted in personal and primitive fear; they go off their rockers easily when afraid. As for the strictures imposed on UN, though the force contains many courageous men and units, the command is unbelievably cautious about the wrong things.

The ANC is very good at close order drill; they eat it up. All weapons are kept reasonably tidy. Barracks and grounds, where soldiers are living, are kept policed from habit. Kitchen utensils shine. Beyond these things, there is no resemblance between the Congolese Army and any other that is familiar to the Western eye.

It is a shock to watch the changing of the guard. The soldier, taking his post, is accompanied by his barefoot wife. She is a bit rump-sprung, but

that is the better for the baby who rides a very low piggy-back, gathered to her by a scarf.

Wives and children live with their soldiers in the barracks. The Government is generous. Rations in kind were issued the family circle until last February. Now there is a ration allowance, which includes all dependents. Each garrison family buys its victuals in the open market and runs its own little family mess. When an ANC soldier dies in service, his wife and children live on in barracks, still drawing Government subsistence.

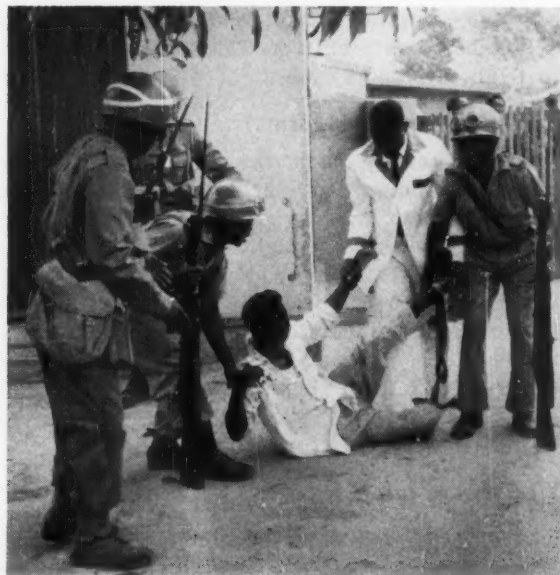
But that is not all. Some of the ANC are polygamous and the Government's bounty humors this design for living. As pay rates have soared (they have increased eightfold since independence) more and more soldiers have fallen in love with love, and more and more wives, regular or ad hoc, have found their way to Camp Leopold. However, with the Army paying the mess bill, the soldier still has a little time left for training and fighting.

Since this Army's present is so heavily skirted, the question of its future might better be treated the same way. The bedding arrangements are not likely to be changed. However, the wiser military attachés in Leopoldville do not despair of the ANC just because its housekeeping arrangements are peculiar.

The future is not hopeless

This is their view of the problem: the Congolese Army could be reconstructed without too much trouble, saving possibly one-third or so of the men now on the roster, and eliminating the greater number who are interested mainly in adding to the national census.

Congolese troops help an injured rioter to his feet near Leopoldville after quelling battle between two rival factions



Possibly 40 per cent of the officers are serious about the job while knowing nothing about command and leadership. They understand weapons (the ANC is more stoutly armed than UN forces) only from the view of the enlisted operator, since they are at best noncommissioned officers wearing officer emoluments, but with no training as such. Devotion to country, organizing groups for tasks, minor tactics, caring for men—all are concepts of which they are ignorant. The Army's Chief of Staff, Colonel Michel Kiembe, a grand old veteran of the Force Publique and a first-class citizen, was jumped from sergeant only a year ago. Only six of his subordinates had warrant officer ratings under the Belgian system. None held a commission. So getting an officer school and a noncommissioned officers academy going for the ANC is a prime requirement, more important even than the elimination of surplus females from the training bases. In the Congo, everybody talks this subject but not one thing is being done.

I asked Old Soldier Kiembe: "If you could have exactly what you wish, what kind of army would you raise to put a firm base under the nation?"

He answered: "The Belgians had the right idea. We had three strong regiments of three battalions each, one heavy weapons company in each."

Question: "Do you mean that an army of 25,000 could still keep peace in the Congo?"

Answer: "Not at all. This is a different problem. Double the old structure and, with enough air mobility to answer local fire alarms, we would be safe. We have a plan. A lot is being said about how the UN and Mr. Hammarskjold would design our military future. But it is our problem. I am telling you what we want to do and what we know would work. Still, nobody ever asks us."

Question: "Could you use the present ANC as a nucleus, or for many reasons, would it be better to start afresh?"

Answer: "Little can be saved. Many in the ANC are too old. What do they say about old dogs and new tricks? Well, it is not just that. Our people wear out fast. Nineteen years is about all a Congolese soldier can take."

There was much more of the same. But it is enough for now to stop and repeat Kiembe's estimate of the needed force level: 50,000 soldiers to keep peace in the Congo, a region as large as the U. S. east of the Mississippi.

When I asked Lieutenant General Sean McKeown, the UN commander: "What's your most critical problem?" he replied: "Too few troops by more than half. With 50,000 soldiers, I could get the job done."

So there is agreement about a practical working figure, if nothing else. But the Irish general, like the Congolese colonel, might as well wish for the moon. And that's the hell of it.

The New Efficiency Report

A glimpse at the basic concepts that went into its making

By Lt. Col. ROBERT C. STOREY

THE Army has adopted a new officer efficiency reporting system. The new form (DA 67-5) and new Army Regulations (AR 623-105) are being distributed. An *Officers' Call* pamphlet on the new system will be available soon. While these official publications describe the new system and its procedures, they do not deal extensively with the basic concepts of efficiency reporting.

All officers—rated and raters—are more than a little interested in a centralized evaluation system that plays so important a part in their professional lives. Every competent officer wants to be rated fairly and equitably, and usually develops a similar attitude towards his responsibility for rating the performance of others.

The new system emerged partly out of hundreds of such discussions of a more formal kind, over the past several years. It is safe to say that every known theory and system of evaluating performance, every reasonable combination of rating methods, every strong and weak feature of the old system, and every concept that might possibly have value in the new, has been a subject of study and purposeful decision.

Every important question about efficiency reporting has several possible answers of equal or at least comparable validity. I shall attempt to spotlight the thinking that led to the many decisions concerning the new system's form and substance.

What is the purpose of an efficiency reporting system?

Efficiency reports have served the Army primarily as a tool of top management by qualitatively differentiating between officers as a basis for personnel actions. In both government and industry, efficiency reporting systems are concerned largely with counseling of employees. The objectives of counseling are to help the individual improve his performance in his current position and to advise him on future growth and career development.

The Army maintains that the efficiency report must meet its requirements for information indicative of each officer's progressive development and his worth, compared to those of his contemporaries. This information becomes a sound basis for competitive personnel actions. When incorporated into the whole record it becomes a qualitative measure of an officer. Specifically, De-

partment of the Army boards, the Officers Assignment Directorate, and the personnel management agencies of the arms and services rely upon these data to establish a basis for promotion, selective schooling, retention or release.

To insure accomplishment of the primary objective of the efficiency report, the Army separates the counseling function from the evaluation function. This does not mean that counseling is less important; rather, the new system puts heavier emphasis on it.

How frequently should officers be rated?

An efficiency report should be rendered when enough information has been gained about an officer's performance on which to base a valid and reliable evaluation. Reports should be frequent enough to give personnel agencies current information on which to base their actions. Accordingly, the Army accepts a report after an officer has been 60 days on an assignment, and requires a report at least once a year. The current average is two reports annually.

When should reports be prepared?

At one time, efficiency reports on all officers were prepared during the same period. However, it was found that staggering the submission dates by rank reduced and distributed the administrative load of processing. The new system continues the practice of requiring reports on a staggered schedule, beginning with warrant officers on 30 September, lieutenants on 31 October, and so on through the report cycle.

How many reporting forms?

A case can be made for different forms for warrant, company, and field grade officers. The jobs of officers in these groups are dissimilar in several respects, and might be more readily described on forms designed for specific degrees of age and experience. On the other hand, a single universal form facilitates comparison of an officer's performance from one period to another. The new system retains the single form which is sufficiently adaptable to reflect all types and degrees of duty performance for all components.

Who should rate?

Army officers are so accustomed to being rated by the chain of command that it may come as a

READ CAREFULLY REFERENCED SECTION IN AR 623-105 BEFORE ATTEMPTING TO FILL OUT ANY ITEM

| PART I - PERSONAL DATA (Read Section IV, AR 623-105) | | | | | | | | | |
|---|-------|------|------------|-------------------|------|--|--|-----------------------------|--|
| 1. LAST NAME - FIRST NAME - MIDDLE INITIAL | | | | 2. SERVICE NUMBER | | 3. GRADE | | 4. DATE OF RANK | |
| | | | | | | | | | |
| 5. BRANCH | | | | | | | | | |
| | | | | BASIC | | DETAIL | | 6. INITIAL APMT | |
| | | | | | | | | YES NO | |
| 7. UNIT, ORGANIZATION, STATION AND MAJOR COMMAND | | | | | | | | | |
| | | | | | | | | | |
| PART II - REPORTING PERIOD AND DUTY DATA (Read Sections IV and V, AR 623-105) | | | | | | | | | |
| 8. PERIOD COVERED | | | | | | 9. REASON FOR RENDERING REPORT (Check) | | 10. REPORT BASED ON (Check) | |
| FROM | | | TO | | | ANNUAL | | DAILY CONTACT | |
| DAY | MONTH | YEAR | DAY | MONTH | YEAR | CHANGE OF RATER | | FREQUENT OBSERVATION | |
| | | | | | | PCS RATED OFFICER | | INFREQUENT OBSERVATION | |
| DUTY DAYS | | | OTHER DAYS | | | CHANGE OF DUTY FOR RATED OFFICER | | RECORDS AND REPORTS | |
| | | | | | | OTHER (Specify) | | OTHER (Specify) | |
| | | | | | | | | | |
| DUTY ASSIGNMENT FOR RATED PERIOD | | | | | | | | | |
| 11. PRINCIPAL DUTY | | | | 12. DUTY NOS | | 13. AUTH GRADE | | | |
| | | | | | | | | | |
| 14. MAJOR ADDITIONAL DUTIES | | | | | | | | | |
| | | | | | | | | | |
| PART III - MANNER OF PERFORMANCE (Read paragraph 21c, AR 623-105) | | | | | | | | | |
| 15. RATER | | | | | | | | | |
| | | | | | | | | | |
| 16. INDORSER. <input type="checkbox"/> I AM UNABLE TO EVALUATE THIS OFFICER FOR THE FOLLOWING REASON: | | | | | | | | | |
| | | | | | | | | | |

DA FORM 67-5
1 OCT 61

REPLACES DA FORMS 67-4, 1301 AND 1775 WHICH ARE OBSOLETE
EFFECTIVE 30 SEPTEMBER 1961.

US ARMY OFFICER EFFICIENCY REPORT
(AR 623-105)

Obverse of new Officer Efficiency Report form

surprise to learn there are other systems. A self-rating system has some merit, particularly if counseling is the main objective. Peer-rating systems have been quite successful in certain circumstances. In fact, if a procedure could be developed whereby an officer could not benefit or penalize himself by rating his peers, such a system might be entirely feasible for Army use.

In industry, a committee is frequently formed to make the evaluation, with a personnel representative or a professional counselor as a member. The Army has long considered the immediate senior officer or supervisor to be best able to measure a person's performance. Any other system, no matter how valid and acceptable, would depart from the principle of military command.

What rating method should be used?

The narrative-type performance description, while very useful and practical, has serious weaknesses for an officer corps of 100,000. Narrative measures indicate only very roughly how one man stands in relation to others. Another difficulty is that the adjectives common to narrative descriptions do not mean the same things to all raters. Even when standard nomenclature is used, one rater has higher standards than another. On the other hand, the use of scales that produce a "number" or a "score" suggests a degree of precision that is beyond the reach of the social scientist. The "forced-choice" method sought to eliminate weaknesses of earlier systems such as bias, halo-effect, and leniency, but inadequate instruction of the officer corps in its use led to its rejection. The Army's solution is to employ a combination of rating methods—excluding the forced-choice. The new system, like the old, combines narrative description with several rating scales.

How many rating officials?

For many years the Army relied on a rater and an indorser. Form 67-4, adopted in 1956, added a reviewing officer as a integral part of the system. The utilization of a reviewing officer has proved to be effective. In the new system he has even greater responsibility to act in the interests of the Army and the rated officer.

How weigh the opinions of rating officials?

A highly debatable point. Some say the rater's evaluation should be given greater weight because he is closest to the rated officer. Others feel that the indorser's maturity, judgment and perspective should be given greater weight. Each situation is different, and provides argument for either view. There are no extensive research data to support one view against the other. Accordingly, the new system continues the current practice of giving equal weight for rater and indorser.

In theory, it may be desirable to discount an indorser's appraisal if he is stationed, say, 500 miles from the rated officer, with few opportunities to observe his performance. Similarly, it may be undesirable to give the same weight to one rating official who has observed the rated officer for a full year that we give to another who has done so for only 61 days. It has been proposed that reports be weighted according to the grade of the rating official—the higher his rank, the greater weight to his evaluations. Until we arrive at a more refined and highly developed system, however, these theoretical advantages cannot be exploited.

Against whom should the rated be compared?

Obviously, a rated officer cannot be validly compared against all others. No rating official could know them all; nor can a lieutenant be compared fairly with a colonel.

The new system continues the practice of comparing the rated officer with others of his grade and branch who have similar experience, service schooling, and time in grade. This matter of comparisons is related to a new feature on the new report form: the expected distribution of ratings per 100 officers. The new regulation warns against interpreting this as a required grouping of ratings awarded in a unit or agency. It is an Army-wide "forecast" that seldom applies to local conditions.

Should varying weights be assigned to "easy" and "hard" raters?

We have long recognized that one of the basic hurdles of efficiency reporting is that there are as many "standards" as there are raters. This is the main reason why some officers are known as "hard" raters and others as "easy." Both groups are equally sincere and conscientious, but have varying standards. After considerable study, the Army concluded that the personal differences among indorsers and reviewers are sufficient to affect the necessary balance.

Should the rater know how the report will score?

Widespread objection to the current rating system was based on the premise that rating officials do not know where they are placing the rated officer in comparison with others. Until now, the numerical values of the scored sections of the efficiency report have not been known to the field. Neither have raters known the actual or the relative value of the ratings they award.

It was decided that, under the new system, rating officials would know the scoring values of their ratings. This decision automatically meant that the relative scoring method gave way to an absolute system. Under an absolute system the rating

| RATED OFFICERS NAME AND SERVICE NUMBER | | | | | | | |
|---|---|--|----------|---------------|----------------------------------|---|-----------|
| PART IV - PERSONAL QUALITIES (Read paragraph 21d, AR 623-103) | | | | | | PART V - APPRAISAL OF QUALIFICATIONS (Read paragraph 21e, AR 623-103) | |
| LEGEND | DEGREE NUMBER | INADEQUATE | MARGINAL | BELOW AVERAGE | AVERAGE | ABOVE AVERAGE | EXEMPLARY |
| | | .0 | .1 | .2 | .3 | .4 | .5 |
| RATER | INDORSER | | | | | | |
| a. ADAPTABILITY (Adjusts to new or changing situations & stresses; bears up under pressure) | | | | | | a. COMMAND A TACTICAL UNIT | |
| b. AMBITION (Seeks and welcomes additional and more important responsibilities) | | | | | | b. COMD NON-TACTICAL UNIT | |
| c. APPEARANCE (Possesses military bearing and is neat, smart, and well-groomed) | | | | | | c. STAFF | |
| d. COOPERATION (Works in harmony with others as a team member) | | | | | | UNIT (U) | |
| e. DEPENDABILITY (Consistently accomplishes desired actions with minimum supervision) | | | | | | PERSONNEL () () | |
| f. ENTHUSIASM (Motivates others by his zeal) | | | | | | INTEL. () () | |
| g. EXPRESSION (Expresses himself clearly and concisely both orally and in writing) | | | | | | GENERAL (G) | |
| h. FORCE (Executes actions vigorously) | | | | | | OPERATIONS () () | |
| i. INGENUITY (Finds solutions to problems regardless of obstacles) | | | | | | OR | |
| j. INITIATIVE (Takes necessary and appropriate action on his own) | | | | | | LOGISTICS () () | |
| k. INTELLIGENCE (Acquires knowledge and grasps concepts readily) | | | | | | JOINT (J) | |
| l. JUDGEMENT (Thinks logically and makes practical decisions) | | | | | | R & D () () | |
| m. LOYALTY (Renders faithful and willing support to superiors and subordinates) | | | | | | COMPT () () | |
| n. MORAL COURAGE (Intellectual honesty, willingness to stand up and be counted) | | | | | | d. SPECIAL STAFF | |
| o. SELF-DISCIPLINE (Conducts himself in accordance with accepted standards) | | | | | | RATER (Specify) | |
| p. SELF-IMPROVEMENT (Takes action to improve himself) | | | | | | INDORSER (Specify) | |
| q. SOCIABILITY (Participates freely and easily in social and community activities) | | | | | | e. SPECIALIST | |
| r. STAMINA (Performs successfully under protected physical and mental stress) | | | | | | RATER (Specify) | |
| s. TACT (Says or does what is appropriate without giving unnecessary offense) | | | | | | INDORSER (Specify) | |
| t. UNDERSTANDING (Appreciation of another person's viewpoint) | | | | | | f. WITH OTHER US FORCES OR AGENCIES | |
| ← SCORE | | | | | | g. WITH FOREIGN FORCES OR GOVERNMENTS | |
| | | | | | | h. INSTRUCTOR | |
| | | | | | | i. WITH RESERVE COMPONENTS | |
| PART VI - OVERALL DEMONSTRATED PERFORMANCE AND ESTIMATED POTENTIAL (Read paragraphs 21f and 21g, AR 623-103) | | | | | | | |
| RATING | EXPECTED DISTRIBUTION OF 100 OFFICERS RATED | OVERALL DEMONSTRATED PERFORMANCE (1) | | | ESTIMATED POTENTIAL (2) | | |
| | | RATER | VALUE | INDORSER | RATER | VALUE | INDORSER |
| a. OUTSTANDING | 1 | * | 100 | * | | 10 | |
| b. EXCEPTIONAL | 2 | * | 90 | * | | 9 | |
| c. SUPERIOR | 3 | | 80 | | | 8 | |
| | 4 | | 70 | | | 7 | |
| d. EXCELLENT | 5 | | 60 | | | 6 | |
| | 6 | | 50 | | | 5 | |
| e. EFFECTIVE | 7 | | 40 | | | 4 | |
| | 8 | | 30 | | | 3 | |
| f. MARGINAL | 9 | * | 20 | * | | 2 | |
| g. INADEQUATE | 10 | * | 10 | * | | 1 | |
| SCORE | | | | | | | |
| PART VII - NUMERICAL VALUE (Read paragraph 21h, AR 623-103) (Scores to be entered by rater and indorser, and verified by a personnel officer) | | PART VIII - AUTHENTICATION (Read paragraph 21i, AR 623-103) | | | | | |
| SCORES | | 17. SIGNATURE OF RATER | | | | DATE | |
| | | TYPED NAME, GRADE, BRANCH, SERVICE NUMBER, ORGANIZATION, AND DUTY ASSIGNMENT | | | | | |
| PART IV | | 18. SIGNATURE OF INDORSER | | | | DATE | |
| | | TYPED NAME, GRADE, BRANCH, SERVICE NUMBER, ORGANIZATION, AND DUTY ASSIGNMENT | | | | | |
| PART VI (1) | | | | | | | |
| PART VI (2) | | | | | | | |
| TOTAL | | | | | | | |
| COMPOSITE SCORE | | | | | | | |
| 19. REVIEWER (Read Section VI, AR 623-103) MY REVIEW <input type="checkbox"/> INDICATES NO FURTHER ACTION <input type="checkbox"/> RESULTS IN ACTION STATED ON CONTINUATION SHEET | | | | | | | |
| SIGNATURE OF REVIEWER | | TYPED NAME, GRADE, BRANCH, SERVICE NUMBER, ORGANIZATION, AND DUTY ASSIGNMENT | | | | DATE | |
| 20. THIS REPORT HAS _____ INCLOSURES. (Insert "0" if appropriate) | | 21. DATE ENTERED ON DA FORM 58 | | | 22. PERSONNEL OFFICER'S INITIALS | | |

U. S. GOVERNMENT PRINTING OFFICE: 1961 O-553716

Reverse of new Officer Efficiency Report form

official assigns a rating to each subordinate which remains unchanged after processing at the Pentagon. In an absolute system secrecy is unnecessary since the rating is determined by the rating official and not the Department of the Army.

The new system honors the desire of rating officials to know "where they are placing a man." Selection and promotion boards will see the score the rater himself entered in the report.

Which parts of the report are most important?

For many years the practice of evaluating traits, qualities, and characteristics has been regarded as a key element. The idea seemed to be that if we can identify essential leadership traits, it should be simple to evaluate those individual attributes. Actually, this is not simple at all. First, experts are far from unanimous as to the characteristics of a good leader. Everyone can compile a list of essential attributes which will be unlike anyone else's. Second, research has proved that if you like a person, you tend to rate him high on the traditionally desirable traits. If you dislike him, these same traits are almost sure to seem less desirable to you. Current literature on performance appraisal emphasizes the devaluation of lists of indefinable subjective characteristics. The new report form has a "traits" section, but its scoring weight is relatively light.

Another criterion that has been highly regarded is the estimate of potential. One of the Army's most important peacetime functions is that of being prepared to provide the leadership essential for war. Accordingly, estimate of potential has been an important purpose of efficiency reporting. The trouble is that rating officials have been asked to predict future performance with little ground on which to base such a forecast. For example, a company commander of a ZI tactical unit may be asked to predict an officer's performance with a foreign government. At one time the Army asked for a prediction of performance two grades above the officer's current rank. Unfortunately, such judgments cannot be based on sound and definable standards. They are highly unreliable, because people are not objective judges and because a person's potential can increase or diminish, for a variety of unpredictable reasons.

The purpose of the efficiency report is to give the Department of the Army a picture of the rated officer as he was seen during a certain period. The picture should record the officer's performance and behavior, and those relevant facts about his personality and character that may relate to his current and potential effectiveness. Carefully prepared, factual, concise, and concrete descriptive comments are helpful to boards and personnel agencies. The "easy" generalization or abstraction serves no useful purpose.

Rating officials should concentrate upon tangible and concrete evaluation of the rated officer's duty performance, including the manner in which he meets his responsibilities. A psychological analysis of the rated officer is not expected or desired. The basic question to be answered is: How well is he doing now on his job? Primary emphasis must be on an officer's performance in his current assignment instead of on opinions concerning his potential and personality.

At the same time, evaluation of personal traits and characteristics, and the prediction of "potential" have a valid role. Personnel agencies must consider these factors because often they must assign people to jobs they have never worked at. Certain assignments demand officers with personal characteristics that may have little bearing on their selection for the normal run of Army jobs. Thus, while traits of character and estimated potential play a relatively small part in efficiency scoring, such information is still useful and needed.

Should the rater show the rated officer his report?

There are three possible answers to this question. It can be made mandatory; it can be left to the rater's option; or it can be prohibited. Of the three courses, it has become clear that allowing the rater to use his discretion is the least desirable.

Research has proved that when the rater intends to show the efficiency report to the rated officer, he tends to inflate it. When he does not intend to show it, there is a clear tendency toward more objective and valid reporting. If showing is left to discretion, personnel agencies have no way of knowing which of the two reporting tendencies are reflected in a particular report.

As to whether showing the report should be made mandatory or be prohibited, the answer seems equally clear. Since showing the report is known to reflect an inflationary influence, the no-show policy is best. It is equally well known that rated officers want to know where they stand. In the new system, as in the old, they can examine their records at the Pentagon.

The proposal has frequently been made that each officer be told the scores he has earned on his efficiency reports. Studies have disclosed that the dissemination of such information would be undesirable because it would provide (at considerable expense) incomplete information which by itself is not significant, and which is highly susceptible to misinterpretation. This is not to say that scored efficiency reports are not of some value in evaluating an individual officer. If the user bears in mind the limitations of the information and does not ascribe to it a degree of validity it does not possess, it is useful as one of the elements

in the over-all analysis of the officer's complete record. Unless a person is familiar with the system and is prepared to spend considerable time in thoroughly perusing the entire record, the knowledge of a score can be misleading. It is like asking a doctor for the patient's blood pressure reading as an indicator of general health.

How should DA monitor results?

In the current system every efficiency report is monitored for administrative correctness at Department of the Army. Inconsistent, inaccurate or thoughtless reports are returned for correction. This has proved necessary and desirable, and will be continued. The monitoring system is effective, resulting in considerable improvement as "the word" has spread. The increasing effectiveness of the reviewing officer has been attributed in no small measure to the indoctrination which this administrative practice disseminates throughout the Army.

To help insure that reports qualitatively differentiate between officers, the Pentagon will monitor reports. Several methods have been considered. One proposal is that DA return a report if the evaluations are inadequate to substantiate the rating. This violates an objective to decentralize those actions that can be performed at a lower headquarters and administratively is unfeasible. Another proposal is to monitor scores by rank within a command so as to have timely information in event of an undesirable trend. The Pentagon visualizes a letter from DA to the commander informing him of the average of his command and, if necessary, commenting on how it compares with the quality of officers assigned to him. It would also direct that rating officials be instructed to bring future reports back in line. The normal expectation is that, if such a directive bears the proper tone of forcefulness, more effective judgment will be exerted. In fact, it is reasonable to expect that the whole tenor of ratings throughout the Army will show considerable improvement. Such a result will be achieved because each officer will recognize that there is a referee to insure that everyone else is playing the game.

Should rating officials make independent ratings, and should they be held accountable?

The new system continues the previous policy of insuring independent evaluations by rater and indorser. Lacking such independence, it would be logical to eliminate the rater from the system in favor of the indorser or reviewer. However, when a report obviously is inconsistent, inaccurate or otherwise faulty, the indorser may return it to the rater for reconsideration. (Or it may be returned by the reviewer to the rater or indorser.) When a rater or indorser knows he will be judged by the

accuracy and objectivity of his ratings, he is inclined to give this task the attention it deserves.

There is a modification of the old procedure whereby the rater and indorser will be required to justify unusually high or low ratings. In the narrative section, raters and indorsers must clearly state their awareness that they are awarding the highest or lowest ratings, and why they are doing so. The integrity of independent evaluations will be respected, but reports may be returned for substantiation, clarification, or additional information.

How should raters be trained?

The matter of arriving at ratings that validly reflect the differences among officers and that yield a reasonable distribution of scores is largely one of training and supervision. When the Regular Army Augmentation Board concluded its mission in 1957, it reported: "Every member of the Board felt that he had profited greatly from the opportunity to study the many efficiency reports and expressed the view that he would be better prepared to make out reports in the future." If senior colonels feel this way, certainly all officers can benefit from specific instruction in the principles and methods of efficiency reporting.

Troop schools and service schools are the media best suited to training large numbers of officers. However, there is a surprisingly large group who are not conveniently available for formal training courses, such as those attending civilian schools. Accordingly, we must see to their individual instruction.

Unfortunately, there is no single or simple solution to the problem of rater training for a corps of more than 100,000 officers of all ranks and degrees of experience, who are scattered all over the world. The method adopted by the Department of the Army is to publish detailed guides and a directive for wide dissemination. Each commander then uses his local resources to impart the necessary instruction.

WHEN the new system takes effect in September, the ultimate test of its soundness will begin. Elements of the system have, of course, been field-tested, but this is never the same as playing for keeps. Only on the day when rating officials sit down to record their evaluations on Form 67-5 will the shakedown cruise be under way. Every rater, indorser, and reviewing officer will bear his share of the responsibility for the success of the mission. If the system is good, they will have helped to prove that vital fact. It should be remembered, above all, that even the best system (which this is believed to be) cannot be fully effective without the understanding and conscientious support of everyone.

AUSA PRESENTS

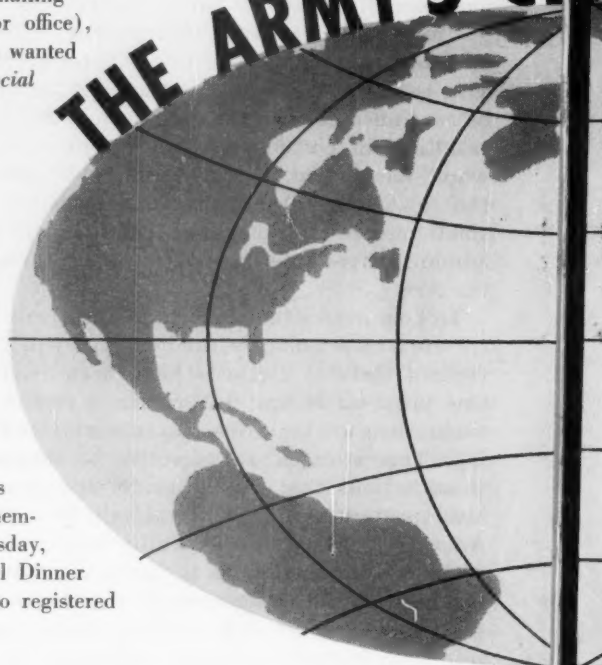


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MAKE-EM-YOURSELF MAP KITS

To get the map you need when you need it

By Col. L. L. HASEMAN

OVER the centuries maps have been the basic intelligence tools for planning and executing military operations. Through the years they have become more accurate but at the same time more complex. Today, our topographic maps are precise documents—almost works of art—prepared through the use of very delicate and complex instruments, and require weeks or months to compile.

The modern topographic map attempts to portray, on a flat surface, all the natural and man-made features within a segment of the earth's surface. Since it is physically impossible to present all this information intelligibly and accurately on a flat piece of paper, we use many stylized techniques and identifying symbols. The variety of signs, symbols, lines, and colors is so complicated that a mass of marginal data must be added so as to wring some order out of the chaos. To the dedicated mapmaker the end product is a thing of beauty; to many users for whom it was prepared it is but a meaningless jumble. The cave man's charcoal sketch was simple and understandable; the modern map is neither.

The sequence of steps in preparing a map is almost staggering. We begin with stereoscopic aerial photography, which requires a precision camera and a high-performance aircraft. Any roll or pitch of the plane introduces distortion which must be compensated for. Ground survey parties must go over the area to establish a network of ground control points that are used to tie the photos together, and to spot elevations that are used as a basis for contouring.

The photography must be carefully processed in a controlled environment. Prints from negatives are made on glass plates which are mounted successively in a stereoscopic projector—a delicate and complex instrument. A highly skilled operator plots the contours. The planimetry (measurement of flat surfaces) of the area, its drainage, vegetation, cover, man-made objects, and other features, must also be plotted. Before the map is ready to print, five different plates must be prepared, each to exactly the same scale. One of the most tedious of these steps involves identifying named features (towns, rivers, mountains)

and lettering the names in their proper locations on these plates. Finally, the several plates are inserted in a multicolor lithographic press and the finished map is printed.

How long does all this take? Weeks in wartime, months or years in peacetime.

Sincere and determined efforts have been made to simplify our mapmaking equipment and make it field-worthy. Equipment has been designed and fabricated which can be carried into the field in vans. However, it is extremely doubtful that current techniques and equipment will always be able to function in the field in any future war. There is even less likelihood that a troop commander can accept the time frame necessary for preparing new maps.

There appear to be two possible solutions to the problem of supplying the necessary maps. One is to prepare in peacetime all the maps we will need. The second is to produce equipment that will rapidly turn out map substitutes in the field.

The first of these potential solutions faces the formidable hurdles of budget and trained manpower, and also leads to the question of whether the logistics system can supply the commander with the map he needs when he needs it. Experience in World War II, which included much less mobility and dispersion than will prevail in the future, revealed that our map distribution system did not satisfy combat requirements. Only about 10 per cent of the maps produced were actually used. Moreover, prewar maps have an irritating habit of becoming obsolete by the time they reach the troop leader. In their drive across France, General Patton's forces depended mainly on Michelin road maps. There is little reason for believing that our map distribution system will function more efficiently in the future.

With all these factors in mind, the Corps of Engineers' Geodesy, Intelligence and Mapping Research and Development Agency (GIMRADA) has begun a project aimed at producing simple, compact equipment that will give the combat commander his own facilities for turning out his own maps, or map substitutes, as and when he needs them. Three different families, or systems, of equipment are needed to meet this require-

ment: one for field army, one for division, one for smaller units such as the battle group.

In the future, the units of a field army will be disposed over a much broader area than in the past, and the army commander will have weapons systems that can reach several hundred miles into enemy-held territory. Therefore, the army commander needs a mapping system that is compatible with the variety, range and accuracy of his weapons.

The Corps of Engineers has proposed a rapid mapping system which utilizes a manned or unmanned aerial vehicle to acquire the mapping data, and a family of data-reduction equipment to produce accurate photomaps. This vehicle would reach extremely high altitudes and supersonic speeds, and cover a radius of several hundred miles. It would carry a standard mapping camera and a side-looking radar, and be controlled by an inertial guidance system for deep penetrations and radio-link guidance for shorter flights. This vehicle could be recovered and reused.

The ground-data reduction equipment will operate itself. An automatic electronic device would scan the photography, remove all parallax distortion, and print an accurate photomap. Simultaneously, it would automatically draw contours

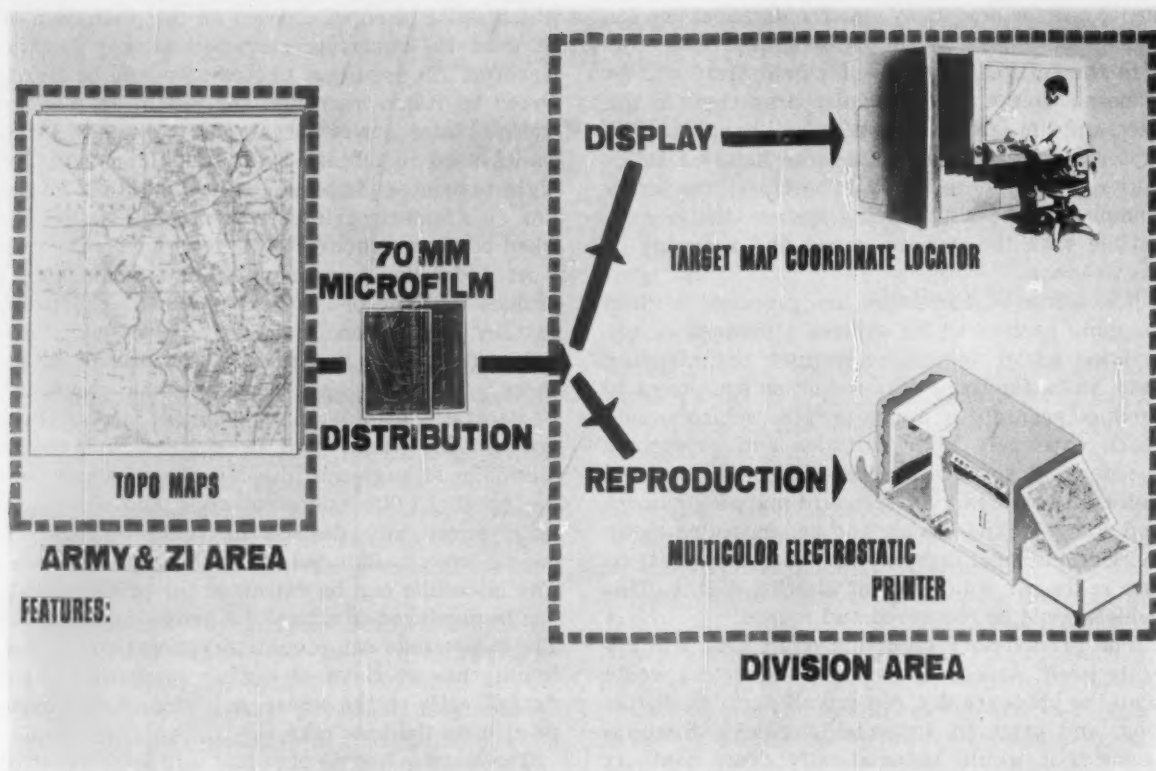
which could be superimposed on the photomap or be used to determine elevation of key terrain features. The resultant photomap would be transferred to 70mm microfilm for use in an electrostatic printer somewhat similar to copying machines used in offices. Total time from start of flight to printed photomap will be about six hours. The electrostatic printer will turn out 2,000 finished copies per hour.

At a division headquarters, the commander's problem is more one of being able to print maps as they are needed, than one of producing new maps. To satisfy this need, the Corps of Engineers proposes using the same 70mm microfilm electrostatic printer as is planned for the field army. This printer will be supplemented by a microfilm storage and display device which will file up to 11,000 microfilm clips and automatically select any desired microfilm through a coding system actuated by a telephone-type dial. The microfilm can be extracted for printing or it can be displayed on a map-size screen for analysis. The commander can prepare his operational plans, intelligence overlays, or similar combat situation data directly on the screen, microfilm it, and overprint it on the base map.

The storage and display unit will hold copies of



Drones mounted with cameras and side-looking radars and controlled by inertial guidance or radio link will fly photo missions. The photographs will be automatically processed into a photomap and transferred to 70mm microfilm for use in an electrostatic printer. The using unit, whether missile (as above), armor or infantry, would receive maps in quantities six hours after the launching of the drone.



Field Army will deliver 70mm microfilm topographic maps in multicolors to Division. When a map of a certain area is needed the target map coordinate locator will designate the proper microfilm which can then be printed on the electrostatic printer at speeds of up to 2,000 copies an hour.

the microfilm photomaps prepared by the field army. However, it could also file microfilm copies of conventional maps prepared prior to combat. If several colors are wanted, the electrostatic printer will print them simultaneously. Consequently, microfilms of the different color plates for conventional maps could be stored at division, and conventional maps could also be produced. The storage capacity of 11,000 film clips represents map coverage of all of Europe, for example, at a scale useful to the commander, thus eliminating the need for truckloads of paper maps from base depots.

The battle group commander is concerned mainly with what's going on on the other side of the hill. He can look to division for conventional maps or photomaps, but he needs up-to-date information of his immediate area. To meet this requirement, the Corps of Engineers is now analyzing a concept for a very simple-family of equipment that can be carried in a jeep.

The current concept is to use a simple rocket device—perhaps a bazooka or similar standard surface-to-surface missile—to carry a camera to an altitude of several thousand feet. To identify it, the launch site would be marked by cloth panels. The missile would be fired vertically, and

the camera would take a single oblique photograph from a predetermined altitude. The camera pod could be recovered by parachute or it could be reinforced with a crush-on-impact nose to prevent damage to the camera. For orientation, the resultant oblique photo would include the panel-marked launch site and the terrain to the front for several miles. Stereophotos that provide elevation data on the resulting map substitute can be obtained by firing two such missiles on parallel trajectories.

Simple enlarging, developing, printing and display equipment—all mounted in the same jeep—would process the film for immediate use and limited reproduction.

In short, conventional maps include data that are much too complex, and their preparation is too time-consuming for quick production in a future war. Further, they include much information that is not essential to the troop leader. In the future, the wide dispersion and high mobility of combat units will largely preclude routine map distribution procedures we have used in the past. Therefore, troop commanders, down to battle group, require their own facilities for meeting their immediate mapping needs. The Corps of Engineers is working to provide this facility.

THE CASE FOR

CBR

By CHARLES A. DODSON

BOTH a Russian and an American have gone into space and returned to tell their stories. Much less publicized but perhaps much more important to the survival of the species was an earlier experiment at the Army Chemical Center in Maryland when 19 medical research volunteers spent three days in "inner space"—eating, sleeping and performing infantry combat tasks in a world of their own; continuously encased in masks, hoods, gloves and other protective clothing during a chemical warfare protection exercise to test both men and equipment.

In actuality these men went farther into inner space than Gagarin and Shepard probed the outer reaches. Neither of the astronauts had time to sleep nor did he perform strenuous duties in an artificial environment. The chemical "space-men" did all of these and, importantly, reported that they could endure the limitations which would be placed upon men under a sustained chemical attack.

That, in a nutshell, is exactly what the U. S. Army Chemical Corps is after. "It is imperative," says Major General Marshall Stubbs, the Army's Chief Chemical Officer, "that men be trained to perform their combat missions even though encumbered with protective equipment." Not only must soldiers learn to fight and survive under such conditions, but the psychological fear must be minimized to the extent that a man will continue to accomplish his mission with the same will he'd display under any other type of attack.

Just as with gunshot wounds, the survival factor is in direct proportion to the extent of exposure to chemical, biological and radiological agents. The traditional high-in-the-right-shoulder slug sustained by the cowboy is, of course, less lethal than the rare one between the eyes. The combat soldier who conscientiously cares for his feet is much less prone to trench foot; the man who keeps his mask and other chemical protective equipment in apple-pie order will be safer than the one who discards all or part of it on the first long march; and the combatant or civilian who affords himself the best shelter available certainly has a better chance of surviving the blast, heat and radiation of a nuclear attack.

The public and the military have become inured to and have accepted the possibility of nuclear attack and counterattack, but there is still an attitude of distaste toward the use and counter-use of chemicals and biologicals in warfare. Since there is considerable evidence that in the next war, should it develop into an all-out conflict, the belligerents would use every weapon at their command to achieve victory, this article, then, is a sincere effort to remove, as much as possible, the pre-conceived mumbo-jumbo from the minds of men.

The chemical aspect

Chemical weapons belong in the Army's arsenal as much as do rifles, rockets and tanks—yet the Free World is the victim of its own propaganda which began 46 years ago when the Germans were labeled "Huns" and "barbarians" for using chlorine gas. So effective was this propaganda (in spite of the fact that the Allies themselves promptly resorted to chemical warfare) that even today many individuals and groups, on humanitarian grounds, condemn any preparation for its use.

(War, in all its infinite variety, can never be humane, and if a long-time soldier may be permitted to express a personal preference—I'd

rather a fast-acting nerve gas left me a nice clean corpse to fit neatly into my mattress cover than to be spattered all over a crossroads by incoming HE or atomic.)

The soldier who went into combat in World War II feared chemical weapons (he also feared 88s, mortars and strafing aircraft) but he was actually better prepared to cope with such chemicals than with the invisible shell. The situation has changed but little when you consider the tremendous surge of developments in other weapons. Certainly, there have been refinements of earlier CBR weapons but the only major development has been the invention of the so-called "incapacitating agents" which destroy the will or ability to attack or resist attack.

The nerve gases, discovered by German scientists while experimenting with insecticides, cause uncontrolled muscular contraction (including man's breathing mechanism) when they enter the body through the respiratory tract, the eyes or the skin. Even comparatively minute amounts of the nerve gases, known as "anti-cholinesterase" agents, can cause serious injury or death if untreated. Treatment includes prompt injections of atropine, an extract of belladonna (individual syrettes are issued), and administration of artificial respiration.

General Stubbs divides the incapacitants into two groups. One causes temporary physical disability such as discomfort, anesthesia, paralysis, or immobilization. The psychochemicals temporarily affect behavior, causing confusion, irrationality, or in other ways cause a change in a person's behavior pattern so that he will not normally respond to calls upon his mind. "Let me stress," says the General, "that the effects are temporary so that within minutes or hours, depending on a number of factors, complete recovery occurs without treatment." (A fuller discussion of psychochemicals appears on page 47.)

Of the incapacitating agents, General Stubbs emphasizes that the United States is the only

PROPERTIES OF CHEMICAL AGENTS

| Agent Symbol | Type | Physical State at 00°C | Odor | Eye & skin toxicity |
|-------------------------|---------------------------|---------------------------------|----------------------------------|---|
| Tabun GA | Nerve agent | Colorless to brown liquid | Faintly fruity; none when pure | Very high |
| Sarin GB | Nerve agent | Colorless liquid | Almost none when pure | Very high |
| Soman GD | Nerve agent | Colorless liquid | Fruity; camphor odor when impure | Very high |
| Distilled Mustard HD | Blister agent | Colorless to pale yellow liquid | Garlic | Eyes very susceptible; skin less so |
| Phosgene CG | Choking agent | Colorless gas | Newmown hay, green corn | None |
| Chloracetophenone CN | Training and riot control | Solid | Fragrant | Temporary severe eye irritation, mild skin irritation |
| CS | Training and riot control | White crystalline solid | Pungent, pepperlike | Severe eye irritation |

country in the Free World which is working on a weapons system designed not to kill. "In military terms," he says, "an incapacitating agent is one that interferes with an individual's ability to perform his duties for a militarily significant period of time, but from which he will recover completely without medical aid. This is actually more than a definition. It is a yardstick. For we measure all candidate agents against this criterion."

The chemical agent is no more an ultimate weapon now than it was 46 years ago. Protective measures have just about kept pace with offensive developments. Examples are the Army's new M17 gas mask and another, also developed by the Chemical Corps, for Civil Defense.

Sad to relate, however, the Army is far from being completely equipped with the M17. And how many of your neighbors actually own a Civil Defense mask? America can survive and fight back, but only if we know how. The time to learn and prepare is now.

The biological side

The traditional American tendency to forgive and forget too soon has sent many men to their deaths. With the Bataan Death March and Bilibid Prison less than a decade behind us, we engaged the North Korean and Chinese communists who starved, tortured, denied medical treatment, and brainwashed men into hollow shells of their former selves. We learned, the hard way, to deal implacably with our enemy of 1941-45—yet five years later we seemed to expect a new enemy to conduct war by the code set up at Geneva.

The Chinese and North Korean communists, fought to a standstill and being pushed back in spite of their barbaric methods and superior numbers, sought to justify their own conduct by unleashing world-wide, trumped-up propaganda accusing the UN of using biological weapons in warfare.

Queried about the manufactured "evidence" that the UN used BW against the communists in

Korea, General Stubbs said that the "evidence" was so weak that it shouldn't have fooled anybody. "If we had used it, the evidence would have been there in plenty—they wouldn't have had to manufacture it. We should have told this to the world, with graphic evidence, saying 'if we had used it, this is what would have happened.'"

In general, methods of combating biological warfare would take the same form as the present Army medical program but would be even more intensified. Certainly the medical service of any army must work unceasingly to try to keep down non-battle casualties due to disease.

We must remember that any region, including our own, that we occupy, live or fight in will be waging its own natural war against our troops. When men band together in large numbers, you can be certain that other armies numbering in the trillions will be banded against them in the guise of disease-bearing micro-organisms. A close look at history would probably reveal that bacteria have won more battles than bombards, bowmen or bombs. Old Nathan Bedford Forrest's success in battle was doubtlessly due not to getting there first with the most but to getting there first with the most combat-effective men.

Chemical Corps officials note that in their attempts to wrest the Holy Land from the Moslems, the Crusaders often found their ranks decimated more by plague than by the enemy actions. When the Moors invaded Spain, their forces were cut down by typhus. Dysentery riddled Napoleon's army near Moscow, and during the Boer War more casualties resulted from typhoid fever than from bullets. Tainted beef caused many deaths in the Spanish-American War, and the great world-wide influenza epidemic of 1917-18, which laid low civilian and soldier alike, had an indirect influence on the ending of World War I. Scrub typhus and malaria hampered the efficiency of Allied forces in the South Pacific during the early days of World War II. During the Korean War, leaders of United Nations forces were greatly concerned

| Rate of action | Physiological action | Protection required | Decontamination |
|-------------------------|--|---------------------------|---|
| Very rapid | Anticholinesterase agent | Protective mask; clothing | Slurry or dilute alkali solution hot soapy water |
| Very rapid | Anticholinesterase agent | Protective mask; clothing | |
| Very rapid | Anticholinesterase agent | Protective mask; clothing | Slurry or dilute alkali solution hot soapy water |
| Delayed (hours to days) | Blisters, destroys tissue, injures blood vessels | Protective mask; clothing | Bleach, DANC solution, M5 ointment, fire |
| Immediate to 3 hours | Damages and floods the lungs | Protective mask | None needed in field; aeration in closed spaces |
| Instantaneous | Lacrimal, respiratory tract irritation | Protective mask | Aeration in open; soda ash solution or alcoholic caustic in closed spaces |
| Instantaneous | Nausea in high concentration | Protective mask | Face into wind, flush copiously with water |

with a mysterious blood disease called hemorrhagic fever. These were not man-made attacks, but attacks upon man by Nature. They demonstrated, however, how effectively disease can weaken an army's manpower.

Just as with gas, Germany initiated the modern form of biological attack in World War I. There is, according to the Chemical Corps, "incontrovertible evidence" that in 1915 German agents inoculated with disease-producing bacteria horses and cattle leaving the United States for shipment to the Allies. They also infected horses of the Rumanian cavalry with glanders, an epizootic disease.

Here are listed some of the most likely biological candidates:

Anthrax, the malignant disease of cattle, sheep and man;

Brucellosis, or undulant fever;

Venezuelan equine encephalomyelitis, a virus disease;

Psittacosis, or parrot fever;

Tularemia, or rabbit fever;

"Q" fever, a comparatively mild grippetype disease ("but it makes you feel like hell," says a preventive medicine authority);

Coccidioidomycosis, or San Joaquin Valley fever, a chronic disease of the lungs and nervous system which sometimes kills.

It must be noted that all these diseases are known to man and are not beyond his ability to cope with them. On the other hand, medical authorities do not discount the possibility of the enemy producing mutant strains which would be more difficult to treat. Nature, herself, is constantly producing new strains or varieties of diseases on her own. We are constantly being challenged by new types of virus infections, for example.

Medical men say, however, that most diseases will respond to "the broad spectrum of antibiotics."

Neither the Army Medical Service, the Chemical Corps, nor the Public Health Service has come up with an all-purpose preventive medicine pill to combat the biological attack we very well may encounter. Effective BW defense lies both in top medical circles and with the individual where education, personal sanitation and the will to live have always been the solution to survival.

Colonel Dan Crozier, Chief Medical Consultant, Office of the Surgeon General, has said: "The possibility of the use of biological agents as offensive weapons against the United States is not something from a science-fiction novel. The threat is real and we cannot sit idly by and wait for the first attack before making plans for our

defense. The potential patient load that could result from the use of these weapons is great but with proper preparation including the provision of necessary supplies, indoctrination of the population, and the training of essential personnel, medical care can be provided and a high percentage of casualties can be expected to survive."

Radiological

The soldier in the ranks, the man who must march forward, will never concede nuclear warheads to be the ultimate weapon—he has seen too many Japanese-held islands, Siegfried Line strongpoints and Korean bunkers plastered with everything but the kitchen sink, only to come under devastating fire the second he exposed himself. When the Army and the AEC at Desert Rock proved that a soldier could get up out of his hole and move forward after an atomic explosion he knew that Mother Earth was still the soldier's best friend.

Yet no one will discount the very real danger of nuclear attack, either upon the homeland or against troops in the field. Hiroshima and Nagasaki showed what can happen to cities, and current tactics take into account the necessity for wide dispersion of battle elements.

Conceding that a person has survived blast, heat and the other dangers resulting from the initial explosion of a nuclear device, the greatest danger lies in fallout of radioactive poisons. The Army has elaborate devices for detecting fallout, and the conventional mask gives sufficient protection against a person breathing a lethal dose. Protective clothing, designed also for protection against chemical agents, lessens the fallout danger. Decontamination, with heavy emphasis on soap and water will, when promptly executed, usually insure against absorption of a lethal dose.

The medical profession has, to date, no cure for the lethal dose, which runs to around 800 roentgens or more, but below that point there is real hope for survival with currently known treatment. Therapy is not needed if the dose is below 100 r, while only mild sedation is indicated in the 100-to-200 r range. Those suspected of absorbing 150 r or more should be hospitalized. Medics make the encouraging observation that the tendency to spontaneous hematological recovery is remarkable in those sublethally irradiated. And, as with cancer research, the medical profession is going ahead with tests which may eventually come up with a cure.

Time to wake up

How odd it is that the people of the United States should be mentally conditioned to calmly accept more than 37,000 violent deaths and many more permanent crippings from automobile acci-



Environmental test proved soldiers could continue with combat tasks in toxic atmosphere

dents in 1961. Other thousands will drown in swimming and boating mishaps (it's not the water that kills but the inability to breathe—and that's how chemical agents cause casualties). Heart disease and cancer figures are passed over casually (270,000 cancer deaths are predicted for this year), yet the public shudders in horror and refuses to even accept the fact that at any time chemical, radiological and biological weapons can, and very well may, show up on the American scene.

The Chemical Corps admits that due to many factors, including public apathy, misplaced humanitarian arguments, and the tendency to underestimate our enemies, the uphill struggle to awaken the American people to the dangers of chemical and biological attack faces much the same problems which beset the National Safety Council, the American Heart Association and the American Cancer Society.

When our country was in the depths of a depression, President Franklin D. Roosevelt said, "The only thing we have to fear is fear itself." Most fears are fears of the unknown and for all too long chemical and biological agents have been hidden behind the same Victorian attitude as made social diseases so prevalent. Some soldiers of World War I survived gas attacks in the trenches only to succumb to bathtub gin or

Jamaica ginger during the Roaring Twenties. Many early American settlers recovered from Yellow Jack in the lowlands only to die of pneumonia in the mountains. That many more lived is proof that the human race has a built-in survival factor unparalleled by any other creature on earth. There may be a little doubt that the human race can and will survive an all-out war—but with proper precaution, education, and protection the chances of the surviving population can be vastly increased.

As offensive weapons

There are many excellent tacticians and planners who argue for the use of chemical and biological weapons solely on economic grounds. To atomize a city with a megaton nuclear device is to remove it, its people, its homes, its industries and its cultural monuments from the earth forever. The Luftwaffe laid waste Coventry and much of London, the Allies left Berlin, Cologne, Hamburg, Stuttgart, Düsseldorf, Yokohama, Osaka, Hiroshima and Nagasaki in ruins. Vast numbers died violently, and the people who remained had to be rehabilitated along with their cities. How much better for the survivors and our own economy had only CB been used against the enemy homeland?

An enemy of the United States could use lethal

agents or he could spread merely debilitating illness among industrial workers to decrease or destroy productive capacity. The resultant decreases in production would seriously weaken defending forces whose supplies of munitions, food and medical supplies would be cut off.

In addition, it is likely that an aggressor would consider the need for captive labor (that's all of us) to man the factories he hoped to capture intact. Because the degree of effect of these agents on people can, to some extent, be controlled, he would be able to select a type which would remove workers from the factories without causing wholesale death.

General Stubbs does not envision chemical and biological agents as substitutes for explosives and nuclear weapons but as members of the total defense arsenal. "They are complementary members of the family of weapons," he says.

"Military strength," according to General Stubbs, "consists of a balanced posture in all weapons systems—not just in one or two but in all those which are available or can be developed. A superiority in one or another would be of little value if an enemy used a third in which we are unprepared. To be more specific, regardless of how strong we are in nuclear weapons or high explosives, such strength would be of little avail in meeting an attack with chemicals and biologicals."

Current state of training

Commenting on the status of CBR training, General Stubbs said that the Army is making it as realistic as possible but that the real difficulty lies in simulating actual conditions which would be found in a contaminated battle area. He noted that 10 hours of CBR training "is a pretty good slice" of the eight weeks of basic given recruits at training centers but in order for our soldiers to get a feel for the problems they will face attention must be given to the subject in the unit, particularly during field problems. Goal of the Chemical Corps is a chemical officer with each battle group and a chemical NCO with each company to provide the required technicians. Here the manpower problem must be faced, for priorities are many in the "modern Army."

How about offensive training?

More and more questions keep cropping up on the state of training for *offensive* use of CB. There must certainly be different techniques, taking in terrain and weather considerations, to name only a couple, in delivering such agents by bomber—but has the Air Force done anything on this?

Troops in the field get a certain amount of training in *passive* aspects of defense against CW, but how many units can actually storm up a good-sized hill while wearing masks (even the new

breathe-easier M17)? Have you ever seen a paratrooper jump while actually wearing his mask? (How much easier his job might be if the drop zone were first clobbered with a non-persistent agent minutes before he makes his jump!)

The Army trains for protection against such warfare yet how many soldiers outside of the Chemical Corps are actually trained in its offensive use? How many artillerymen or missilemen would know the first thing about loading shell or missile with a chemical agent or the technique of delivery? How many helicopter or light aircraft pilots have ever undergone instruction in delivery of CW spray? (This last is not child's play and requires a great deal of finesse—just ask any crop-duster pilot.)

Although maneuvers are elaborately planned and executed, they still seem to stick to one general assumption: that only the "aggressor" will use chemical agents against "friendly" troops. Umpires set off smoke and warn troops that they are under gas attack and rule out certain men as casualties.

But have you ever seen an attack order that read something like this: "Grasshopper Red will attack and secure Hill 192 at 0550 hours. Supporting fire will be furnished by Gunshot, to be delivered, beginning at H minus 30, for a period of 15 minutes. Supporting fire will consist of HE, WP and non-persistent chemical shell." Do Aggressor or friendly troops actually simulate delivery of CW in connection with conventional or nuclear fires or is this simply something an umpire carries out according to the maneuver plan?

On a large-scale maneuver (such as Winter-shield II) does the Army actually utilize troops to simulate stockpiling such supplies in rear areas to include guarding the dumps? On a STRAC exercise does the Air Force airlift simulated CW agents for great distances?

There is concrete evidence that our enemies are well prepared to use such warfare against us in any future war—but will we be caught as short in preparation to use it as an offensive weapon as we were with the inadequate bazooka we took to Korea?

The pressing need

The tactical commander should have as much option to use chemical weapons to help him seize an objective or defend a position as to employ infantry or armor, or a combination of both. The strategic side should be as able to decide on the use of chemical or biological agents, or both, as nuclear, high explosive or incendiary. In this area there must be no question of catching up or of second-best. The military must have these additional strings to its bow—with no strings attached.

PSYCHOCHEMICALS

A weapon that incapacitates but doesn't kill or destroy

By Maj. E. M. GERSHATER

THE pronounced trend in development of weapons systems has been toward the bigger bang, the longer reach, the more destructive volume in the smaller package. A single thermonuclear bomb in a few seconds delivers far more explosive power than the total dropped by all the aircraft of all combatants, in all theaters, during World War II. A single tactical nuclear missile can inflict on its target more destruction than a hundred battalions of 155mm Long Tom artillery firing one round per gun simultaneously. And the end is not yet in sight. Smaller packages, bigger bangs, and longer reach are yet to come.

What does all this cost? What portion of our national wealth is disbursed for procuring weapons of greater and greater destructive potential? The direct costs of research, hardware, black boxes, testing, surveillance and maintenance are huge, but calculable. The indirect costs, less easily calculated, are probably much larger.

After the intense bombing of Germany during World War II, our country decided, from both humanitarian instincts and a pragmatic desire to erect a bulwark against communist expansion, to subsidize the reconstruction of the shattered German economy. Similarly, in Japan, whose industrial potential had been almost obliterated even before the use of atomic weapons, by the massive incendiary raids of 1944 and 1945, there was initiated a vast, postwar build-up, financed largely from U. S. resources. The total monetary cost to the United States for these operations

will likely never be known exactly.

Obviously, a nation fights a war to win it. But is there a better means of imposing our will upon the enemy without resorting to massive loss of life, property destruction, and immense monetary cost which characterized World War II and which undeniably will characterize any future conflict that sees the use of nuclear weapons?

THOUGHTFUL study has been provoked among professional soldiers by the release of information, including a film strip, pertaining to a test conducted on a normal, healthy, red-blooded American cat named Speedy. Prior to exposure to any abnormal condition, Speedy displayed all the instincts of an aggressive mouser by attacking all mouse targets with alacrity and obvious relish. But, after exposure to one of a new class of compounds known as psychochemicals, she exhibited great anxiety and uncertainty, avoided mice frantically, and even demonstrated a strong reaction of fear when a mouse approached her closely.

In another test, during a rest break a squad of smartly trained, well-disciplined soldiers were surreptitiously fed a dose of one of these compounds in their coffee. The drill sergeant was not dosed, and gave his commands as before, but among his squad all appearance of smartness and discipline vanished. While individual reactions varied, the response was one of general inattentiveness, lack of coordination in movement, and great fatigue. Two men were seized with uncontrollable fits of laughter and continued to giggle and simper for an extended period.

A senior staff officer scheduled to report to the maneuver director of a large-scale field exercise, after being surreptitiously doped, shortly experienced extreme drowsiness. Despite all efforts to remain awake, alert, and coherent, he literally fell asleep on the commanding general's desk in the midst of his briefing.

In no instance were the effects permanent or damaging, but it is worth noting that for some minutes or hours, at any rate, none of these men were truly combat-effective. Let us visualize a few situations—for the enemy, happily—where the effects might be more significant.

During a vigorous U. S. attack on an Aggressor position, the operations officer of the enemy corps opposing our advance rushes to the corps commander for an immediate decision on implementation of a counterattack plan. To his dismay, he finds the Old Man silent, introspective, even dreamy, but with sudden flashes of anger, hilarity, and moroseness. No decision is forthcoming. The deputy corps commander is incoherent and appears to be drunk, although it is well known about headquarters that he is a teetotaler.

During an attack to seize Brückepont bridge,



an objective vital to our mission, U. S. assault troops find the Aggressor defenders sound asleep, as if in a paralyzing stupor. Three hours later, after the bridge is secured, the enemy guard detail is in a POW cage. These soldiers are stunned, and cannot seem to recall what had happened.

Twenty-four hours after the flight by a single U. S. spray plane over a huge enemy rear-area industrial complex, our clandestine agents in the area report that virtually all production of armored vehicles, artillery and mortar shells, rifle grenades, cargo trucks, walkie-talkie radios, and portable infantry-type radar sets, has come to a halt. Mass absenteeism is common at the plants, numerous fights have broken out among the relatively few workers who showed up, and supervisors have been observed to be hilariously singing and cavorting in the boiler rooms.

FAR-FETCHED? Not necessarily. While there are many unanswered questions concerning the physiological action of these compounds, while much research remains to be accomplished, and while the exact tactical and strategic role which this type of weapons system may fill in our national defense scheme is yet most uncertain, there seems little valid technical reason to doubt that here is a potentially valuable weapons system. What advantages do psychochemicals offer?

- They are effective. If the extensive tests and studies thus far completed mean anything, they indicate clearly that it may be possible to temporarily disorganize the enemy's chain of command, his esprit, his will to fight, and his physical and mental capacity to fight, through drastic, uncontrollable physiological and emotional reaction to these chemical compounds.

- They are flexible. Because there are whole series of these compounds (called homologues), made by slightly altering their molecular structures and, therefore, their characteristics, a wide spectrum of response can likely be achieved. The effects can be tailored to meet our commander's desires, ranging from drowsiness or mild hallucinations, through confusion and lack of physical coordination, to hysteria, irresponsibility, or complete withdrawal. While at best this is still an art

and not an exact science—and probably will be for some time to come—nonetheless the possibilities exist for controlled effect in varied tactical uses.

- They are economical. While cost is always a relative factor, chemicals of this type are inherently far less expensive to produce, pound for pound, than fissionable materials or even some of the more advanced conventional weapons. The structure of some of these compounds is not simple, and there are always, in any chemical production, problems of amount of yield, as well as purity and stabilization of product. But the U. S. has a striking advantage because without question our chemical industry is the largest, the most efficient, and the most versatile in the world.

- They are not "retroactive." An enemy nation subdued by the use of psychochemicals against its armed forces and against its support services will not pose to the victors the mammoth problems of reconstruction and rehabilitation presented by Germany and Japan in 1945. Factories will remain standing; cities will still be alive. These are not weapons of mass destruction.

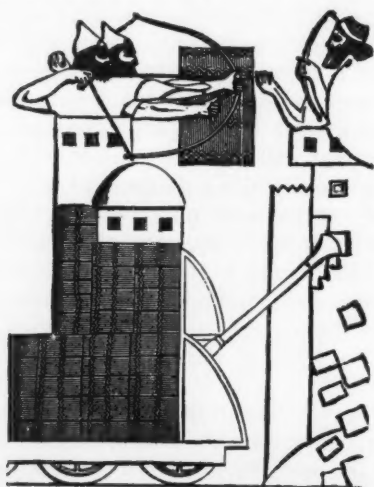
- They are less injurious. Properly employed, these agents are likely to cause far less loss of life, less maiming or crippling, and less permanent after-effects, than has been true of high-explosive, alone, in past conflicts. (We need not mention the vast numbers of thermal and radiation casualties certain to result from nuclear detonations, or such refined savageries as the portable flamethrower, the white phosphorus grenade, and the Bouncing Betty mine.) All in all, the psychochemicals probably constitute an excellent tactical weapon. If these circumstances would tend to diminish the feeling of hatred and resentment in defeated peoples toward their conquerors, we can count that as a plus value too.

- They are a simpler weapons system. Agents of this type are easily stored, loaded into munitions, and delivered on target. They may be projected from generators upwind of the enemy as

an aerosol ("fog" or "mist"); they may be introduced clandestinely into his food and water supplies; they may be injected, by one well-placed agent, into the ventilating systems of large headquarters. Safety and surveillance measures will be far less complex than those currently required; for example, for nuclear weapons at the national stockpile sites. While effective personal protective measures can be adopted—the gas mask, protective clothing, highly sensitive (and expensive) alarms or detectors—no soldier or factory worker can live, eat, fight, and function 24 hours a day in this equipment. Since most agents of this type are colorless, odorless, tasteless, and produce no immediately recognizable physiological symptoms (as does tear gas on the eyes and nose, for example), it may be extremely difficult for a soldier or worker to know or suspect he is being attacked with psychochemical agents. Sprays can be made to resemble obscuring smoke; artillery shells can be designed that display the same burst characteristics as HE rounds. Under these conditions, identifying an attack is a real problem.

THESE psychochemical agents represent a different approach to the military requirement for inflicting casualties. What we seek here is the *temporary* ineffective, the soldier who for minutes, hours or possibly days cannot carry out orders or perform his duties properly and is, therefore, useless to his commander. While he is in a state of exhaustion, or extreme exhilaration, or deep despondency, or one of uncoordination, incoherence or confusion, we are rapidly and effectively accomplishing our mission—hopefully at little cost to ourselves in casualties, time, and materiel. Since these are primarily antipersonnel weapons, there would be no need to reconstruct cities leveled to the ground during hostilities.

Patently, the United States has no monopoly on scientific and technical advances. There is incontrovertible evidence that other nations are engaged in intensive research in chemical agents of all types. Some of their leaders have publicly declared both their willingness and their ability to wage tactical and strategic chemical warfare. The House of Representatives Committee on Science and Astronautics, in a 1959 report on chemical, biological, and radiological warfare, has categorically stated, "The conclusion is inescapable that the Soviet Union and other Communist countries plan to use CBR, if they find it to their advantage." Today, few realists can doubt the likelihood, during any future hostilities, of attacks upon targets within the continental United States. Nor is there any rule which precludes an enemy power, inferior to the U. S. in fission or thermonuclear weapons, from striking with another class of weapons in which it is superior.





ChemCo's COMING

The combat commander's aide in the strange world of CBR agents is the Chemical Company (Combat Support)

By Lieutenants HENRY H. HARPER & DAVID M. PARKER

COLONEL Able had read articles in ARMY concerning infantry squads equipped with nuclear-powered weapons, microsecond communications, and the missile age as perhaps the ultimate step in warfare. Now he was reading about insidious new CBR agents that could quickly kill or stupefy his men—or leave *him* mentally incapable of leading them.

He laid the magazine aside. "How would I fight against things I've never seen or wouldn't see until they had hit me? How can you expect a combat commander to fight these revolutionary weapons?"

Our colonel is not alone in his feeling of insecurity. But he won't be alone on the battlefield when called upon to face the enemy's CBR weapons. The Chemical Corps has a new support unit that is designed to help him and his outfit.

The 22d Chemical Company (Combat Support), at Fort McClellan, Alabama, is such an outfit. Right now it is flexing its young muscles under the guidance of the Chemical Corps Training Command. Its activation in 1958 marked the first time the wide variety of technical skills required by CBR warfare was made available directly—and in a single package—to the combat units of a corps.

Platoon supports division

The nine officers and 237 enlisted men of a chemical combat support company are organized into six platoons. This company will be assigned to a field army and attached to a corps.

Each of its platoons will support a division and work under the operational control of the division

chemical officer. It is this platoon, then, or elements of it, that Colonel Able would call on for help. It includes special sections trained in missions that involve supply, maintenance, and decontamination.

This new unit will not replace any existing outfit, and it will not perform all CBR functions for any commander. However, it will augment the supported unit's effectiveness in combating CBR, through its advice, assistance, and training.

The support this platoon will provide can be divided into three types: continuing services; services performed in an order of priority designated by the supported commander; and priority services that require the issuance of special equipment.

Continuing services

Continuing services, which employ the platoon's organic equipment, include the establishment for a division of a chemical supply distribution point. This may require additional transportation that must be furnished by the supported unit. The support platoon will provide third-echelon maintenance for the division's Chemical Corps equipment. This service also may require additional transportation to move equipment to maintenance facilities. Lastly, the platoon is responsible for chemical technical intelligence operations in the division's sector.

Priority services

Priority services are those performed according to the priority assigned the supported commander, and these too use the platoon's own equipment.

Priority services require the platoon's help in CBR reconnaissance, surveying and monitoring. When the occasion demands, the platoon may have to divert all its troops and vehicles for the purpose. It conducts limited decontamination, neutralizing enemy CBR agents over areas or on materiel considered critical. It establishes a personnel decontamination station and supervises its activities, and advises and assists in the protective treatment of clothing. The platoon also conducts special training of troops in the supported unit.

Services requiring special equipment

The services performed by the platoon on a priority basis and which require additional equipment include smoke-screening as an independent operation or to supplement the work of a smoke-generator company. For this the platoon uses smoke pots or it may operate as many as eight mechanical smoke generators. It services the division's portable and mechanized flamethrowers. The platoon advises and assists in preparing flame and toxic minefields, and to a limited degree installs such barriers. It prepares field expedients,

and its uses of flame fuels and mines is limited only by the imagination.

Versatile, with many skills

The chemical combat support platoon is a unit in which is concentrated many CBR skills. Today it may neutralize a chemical agent blocking a supply route. Tomorrow it may help screen that supply route with smoke. The day after it may set up a chemical supply point beside it.

The platoon might help decontaminate friendly troops and then install for them a toxic or flame minefield. Of course, it cannot do all these things simultaneously, but its range of abilities is broad.

When its six platoons are concentrated, the company provides its own mess and other administrative needs. When its platoons are employed separately on an attached basis, they depend on the supported units for these services.

Colonel Able won't have to play nursemaid to the chemical combat support company. Many support units must depend on combat elements for protection. Not so with this new chemical unit which has its own local security built in. What's more, it is completely mobile.

Decontamination is one of the jobs of the Chemical Company support unit. At Fort McClellan a road is made safe for friendly troops by a sprayer that covers contaminated areas with a solution that neutralizes chemical agents



THE HOST SNAIL

Snail fever inflicted high costs on our World War II military forces and threatens today to be the world's No. 1 parasitic health problem

By JAMES W. POLING

WHEN U. S. troops stormed ashore at Leyte Gulf in October 1944, they encountered a wholly unexpected enemy. Many of them had survived the Cape Gloucester, Finschhafen and Hollandia campaigns, fighting off Japanese with a rifle in one hand, fending off malaria with an atabrine pill in the other. But on Leyte, where there were few malarial mosquitoes, there was an equally dangerous, less easily detected enemy, and no pill our troops could use in self-defense. Consequently, a number of them succumbed to a disease they had never even heard of: snail fever.

Typically, the disease didn't show itself for a number of weeks. It wasn't until New Year's Day that the first two military cases showed up at an evacuation hospital. Soon an epidemic was raging. The Army Medical Corps, caught short by the outbreak, had to resort to words, not medical means, to fight it. On the banks of Leyte's streams and ponds, where lived the snails that spread the disease (these snails cannot survive in salt water) signs appeared bearing the warnings: "Danger! Snail Fever! Keep Out!" or, "Snail Fever and Death Here! No Swimming!" The troops were lectured, too. Warnings were broadcast by medics in jeeps equipped with loudspeakers.

Even so, before the epidemic was brought under control, 1,717 Army and 17 Navy men were stricken with the disease, at a cost to us of 300,000 fighting-man-days and \$3 million for treatment. It was one of the worst medical disasters of World War II.

Because of it, the world's public health authorities were finally awakened to the seriousness of a disease that had long been neglected by all but a few tropical-disease specialists, whose cries of warning had gone unheard for decades. And today

it is recognized that snail fever may well be growing into the world's No. 1 parasitic health problem. It is impossible to number the people already suffering from the dread fever because no accurate count can be made in the regions where it is most common: Puerto Rico, much of tropical South America, Africa, the Middle East, Japan, China, and the Philippines. Published guesses run 100 million and higher.

The Typhoid Marys

Although it is popularly called "snail fever" the name is misleading, for snails are not directly responsible for the disease. They are simply the Typhoid Marys that spread it. The disease itself is caused by a parasitic blood fluke, or worm, of the *Schistosoma* family, from which they fever gets one of its two medical names, *schistosomiasis*. Medically, it is also known as *bilharziasis*, after Theodor Bilharz, the German parasitologist who identified the blood fluke in 1851.

To attack a human, the blood fluke must first pass through a preliminary growth stage in the body of one of a small group of amphibian or fresh-water snails. These snails, closely resembling those seen in home aquariums, live in the streams, ponds and rivers of most underdeveloped countries, and are called the fluke's "host." For when a fluke egg hatches, it releases a larva that has to attach itself to a host snail within 35 hours, or die. When it finds a suitable snail, the larva burrows into its body and enters a period of incubation. In about eight weeks, it gives birth to many hundreds of microscopic arrow-shaped progeny called *cercariae*, which quickly work their way out of the snail's flesh and back into the water.

These free-swimming *cercariae* may be deadly to man as well as to many animals. Dozens of the tiny "arrows" can penetrate the skin in a matter of seconds. In primitive countries, where streams, ponds and irrigation ditches serve entire populations as drinking fountains, bathtubs, laundries and latrines, the potentially lethal arrows never lack targets.

In the human body, the *cercariae* mature into small worms and settle in the abdomen. There they mate—and for 10, 20 or even 30 years, the female produces anywhere from 300 to 3,000 eggs daily, day after day.

Some of the eggs are excreted from the body into the streams and ditches inhabited by the host snails, to hatch and begin the fluke's man-snail-man life cycle anew. But the vast majority of them remain in the body, unhatched. The sheer mass of these eggs, more than anything else, is what causes the illness. The blood stream carries them by the thousands to the liver, the bladder, or the spleen. As they pile up and up, the eggs build dams

which block the normal flow of body-fluids through these vital organs. Then the organs begin to malfunction.

After three to six weeks there is usually an explosive onset of high fever, generalized aches and pains, diarrhea and extreme weakness. In about 10 weeks, these symptoms subside and the disease goes into its chronic stage.

As the number of eggs deposited in the body mounts astronomically, severe cirrhosis of the liver develops. The spleen swells to such grotesque proportions the victim looks as if he had swallowed a watermelon whole. He grows more anemic, increasingly emaciated, and steadily weaker, until he is virtually helpless, too feeble to work. Sometimes, too, the eggs get carried to the lungs, creating a condition resembling tuberculosis. In a few cases they may reach the spinal cord and cause paralysis; or the brain, where they bring on convulsions. The final result may be death, which comes with agonizing slowness.

A man-made disease

Snail fever was first described in a 4,000-year-old Egyptian papyrus. But today the World Health Organization (WHO) calls it a "man-made" disease, because in constructing huge irrigation projects in the world's underdeveloped countries man is now spreading the disease in the name of progress. For wherever fresh irrigation waters flow, they carry the Typhoid Mary snails with them.

In the Congo, for example, an extension of a rice-field irrigation system raised the incidence of the disease from three per cent to 35 per cent in 12 months. There are reports of an increase in snail fever in the region around Brasilia, the new capital Brazil recently hacked out of the wilderness. It increased sevenfold in an area newly irrigated by a small Egyptian dam. In Southern Rhodesia, a \$9 million irrigation system had to be abandoned before it was completed, because of the

speed with which it carried snails to previously uninfested sections of the country. And after the disease had spread to about a million of his country's 2.5 million people, Southern Rhodesia's Commissioner of Health grimly warned the world, "Large irrigation schemes may well wreck the health of a country and bring its most grandiose schemes to a pitiful end."

Because engineers and government officials too often ignore such warnings, some public health experts have estimated that the immense Aswan dam, designed to increase Egypt's arable land by a third, could spread the disease to 60 per cent of the people it will serve. Since usually the snail fever victim is lost to the labor market, should this happen the economic benefits Egypt hopes to gain from the dam could be cancelled out by the country's loss of productive manpower.

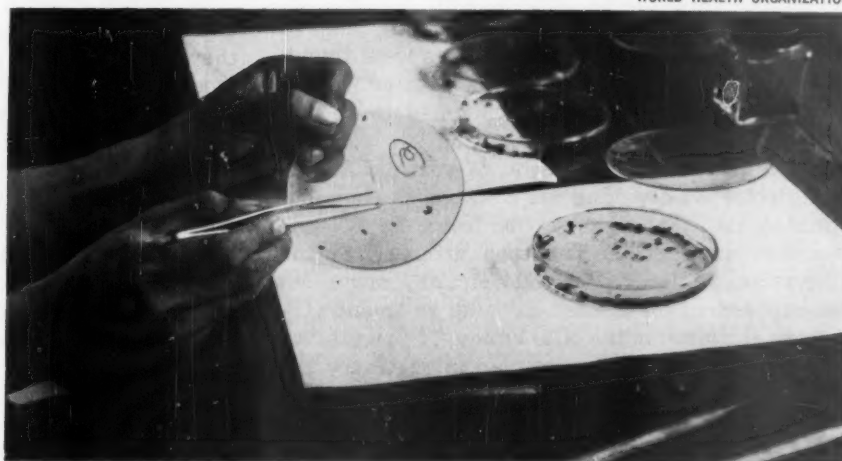
How the U.S. is affected

The U.S. has a stake in snail fever, too. The heavy incidence among Puerto Rican immigrants has created a public health problem in several of our larger cities. New York, for example, has had to open up four new tropical-disease clinics to handle its current burden of 70,000 snail-fever cases. Occasional cases crop up, too, among Americans working or traveling abroad. Among our overseas troops, the Army reported 737 cases in the last five years of record, 1954-58.

Moreover, two of our native snails are potential hosts. One has been found only in the vicinity of Baton Rouge, Louisiana. The other is more common, ranging from Lake Ontario to Kentucky, and from Iowa to the Atlantic coast. However, though any sufferer from snail fever could easily pass his infection on to these snails, our public health authorities are confident that our modern sanitation system would break the fluke's man-snail-man life cycle, saving us from anything more than sporadic outbreaks of the fever, during which countermeas-

WORLD HEALTH ORGANIZATION

The black dots are snails, used by the blood fluke as a host carrier from which it produces hundreds of deadly cercariae



ures could be taken immediately to prevent an epidemic.

The scientists counterattack

The flare-up of the epidemic in Leyte unquestionably spurred U.S. scientists into an immediate and vigorous attack on the disease, which still continues. The Army and Navy rushed research teams to Leyte. Doctors plunged into clinical study of the disease, while parasitologists probed into the life cycle of the blood fluke. Attempts were made to find a salve which would keep *cercariae* from penetrating the skin. Uniforms were soaked in chemical compounds, in a hurried search for a repellent which would drive the *cercariae* away from soldiers forced to fight through infested waters.

Many infantrymen were startled by the sight of a young Navy lieutenant crawling along the banks of streams, collecting snails and painting them yellow. Some thought he was the victim of battle fatigue. The lieutenant—R. Tucker Abbott, a Harvard undergraduate whose study of malacology, the science of mollusks, had been interrupted by the war—was far from mad. He was studying the migration habits of the host snails.

Abbott, now Curator of Mollusks at the Academy of Natural Sciences in Philadelphia, became involved in another curious project while on Leyte. A group of toxicologists was trying to develop an effective molluscicide, or snail poison. They believed, as do most authorities today, that the best way to control the fever was to break the vital man-snail-man cycle by destroying the snails. But to be sure of breaking the cycle they first had to make certain that the poisons they were pouring into the island's infested waters were as toxic to the snail's eggs as they were to the snails. But they were unable to find the eggs.

So they turned to Abbott for help. After three discouraging months spent searching for the eggs, he discovered they'd been in plain sight all the time. The female snail, he eventually learned, hid her eggs from predators by camouflaging them to look like fecal pellets. Once the eggs were found, all but two of the many poisons with which the toxicologists were experimenting had to be discarded, as being non-toxic to them.

Meanwhile, in Egypt, a lone, 67-year-old American doctor was making his courageous contribution to the fight against the fever. Dr. Claude Barlow, now retired but then attached to the Egyptian Ministry of Public Health, saw occasional cases of the disease cropping up among U.S. troops stationed in the Nile Valley. The possibility haunted him that a serviceman might carry the disease home. If this happened, and if there was an outbreak of snail fever in the U.S., Dr. Barlow was afraid it might prove catastrophic. For he



ARMED FORCES INSTITUTE OF PATHOLOGY

In the chronic stage the spleen swells to the proportions of a watermelon and the victim may become virtually helpless

knew that, almost certainly, not one American doctor in a thousand would recognize the disease. And there was little in the literature available to the average doctor to guide him.

Dr. Barlow's ordeal

So Barlow deliberately placed 224 live *cercariae* on his abdomen—counting the nettlelike stings as they entered his body—and turned himself into a human guinea pig. Then he made what must be the most undeniably first-hand study ever made of snail fever—even though at times he was so sick he had to crawl from his bed to his microscope—and reported his findings to the American medical fraternity.

To cure himself, Dr. Barlow turned to tartar emetic, the oldest and still the most effective drug used for treating the disease. Unfortunately, despite its effectiveness, the drug is so toxic it produces serious side effects. According to Dr. Barlow, "tartar emetic is the filthiest treatment imaginable. No wonder natives seldom return for a second injection. The first is enough to finish any-

one off. I got injections every other day for 40 days, and was nauseated the whole time. And my joints ached like blazes. At the end I was used up. Even today, at 84, I shudder with nausea every time I see a hypodermic needle."

For his courage and scientific zeal, in 1947, Dr. Barlow was awarded the Certificate of Merit by President Truman.

The Army and Navy move in

At the end of World War II, the Army, knowing that for years it would have occupation troops stationed in Japan, immediately sent its 406th Medical General Laboratory to Tokyo to do research on tropical diseases, with special emphasis on snail fever. One of the unit's continuing efforts has been to find an ideal molluscicide, a poison that will kill snails without harming humans, fish, livestock or aquatic vegetation.

To date, the 406th has tested more than 380 chemical compounds. One successfully killed off 99 per cent of the snails in the 150 acres of waterlogged rice paddies farmed by the villagers of Nagatioshi, over a two-year test period. While more than half of the village's 1,050 inhabitants were infested when the test began, in its final year not a single new case of snail fever showed up. Unfortunately, the poison also played havoc with the local fish, the major source of protein in the villagers' diet. Even so, the grateful natives pooled their scarce yen to buy a bronze bust of the unit's commanding officer at the time, Colonel George W. Hunter, III, which they ceremoniously erected in the courtyard of the village school. The destruction of the snails was immeasurably more important to them than the loss of their fish.

The Navy, too, took steps against snail fever after the war, setting up Naval Medical Research Units in both Formosa and Egypt. Its first move was to send Tucker Abbott into the snail-infested Hangchow region of China to continue his studies. While there, he also drew up for the Academy of Sciences in Nanking a program for training Chinese medical malacologists. However, when the communists took over China, they apparently discarded his plan—to their ultimate sorrow.

In December 1949, Mao Tse-tung issued orders for an invasion of Formosa in early 1950. Lacking landing craft, the communists planned to transport their troops in deep-hulled junks from which they would have to swim to shore. Gathering their finest troops for the assault, the Reds began giving them swimming lessons in the canals of Chekiang and Fukien. The inevitable happened. Within weeks about 40,000 men were down with snail fever. The Reds tried desperately to cope with it, but snail fever doesn't quickly respond to treatment. The Reds lost six crucial months. By then the Korean War had begun, the U.S. Seventh

Fleet was in Formosa Strait, and the chance for an easy conquest of Formosa was gone.

WHO takes to the field

Since 1950, WHO research teams, many of them staffed with American scientists, were in the field, working in support of any government in need of their assistance. They have been in the field ever since, experimenting constantly.

In Egypt, irrigation ditches have been lined with cement, to discourage snails from taking up residence in them. In Israel, the flow of streams has been increased to test the theory that snails cannot breed in rushing water. On an experimental farm in Ghana, a newly devised system of intermittent irrigation in rice fields appears to have upset the snail-parasite cycle without having hurt the rice.

Puerto Rico is in the midst of a promising experiment. The host snails rely on aquatic vegetation for food and shelter, and lay their eggs on its fronds. Now an extremely gluttonous snail of another species has been found, one that can literally eat the host snails out of house and home and into extinction. When this voracious eater was introduced into five ponds heavily populated with fever-bearing snails, it stripped the ponds of their thick vegetation in 81 weeks, and in the process not only starved out the carrier snails but ate up all their eggs. If tests confirm the belief that the glutton is not a potential disease carrier, too, it will be bred and distributed throughout Puerto Rico.

Yet no matter what is tried, in the end nothing seems as effective as poisoning: but no molluscicide has been found which is 100 per cent effective. Furthermore, snails mature at the age of two months and at once begin laying clutches of anywhere from 20 to 30 eggs. Consequently, if only one or two snails survive a molluscicide, it is mathematically possible for a colony to rebuild to a population of more than three million within a year.

Unhappily, little progress is being made with drugs against snail fever itself. Other than the tartar emetic used by Dr. Barlow, only two drugs are available, Stibophen and Miracil D. Both are less effective than tartar emetic. Though they are also less toxic they, too, produce strong side effects. Even so, the scientists leading the assault on snail fever are a surprisingly optimistic lot. Not that they're blind to the problems facing them. They know all too well that the fever is spreading, that their drugs are inadequate, and that their molluscicides are only moderately satisfactory. But they point out that no disease is conquered overnight, very few even in a span of generations. Yet, considering the short time snail fever has been under organized attack, they feel that their chances of eventual success are good.



THE BETTMANN ARCHIVE

The tempestuous Baron, former aide-de-camp to the King of Prussia, made soldiers out of farm boys

MAAG in Reverse

"I can curse dem no more"

By Capt. CLARE R. J. ROGERS

● The first attempt in any field of endeavor is always unique, but the first American MAAG deserves more attention than it has received. This was no expedition of skilled American technicians chosen to train a less advanced foreign army; it was a foreign mission detailed to train a raw American army.

In late February 1778, General George Washington, commander-in-chief of the Continental Army, rode out from Valley Forge along the York pike to meet a new arrival: Frederick William Augustus Henry Ferdinand, Baron von Steuben, late of the service of Frederick of Prussia. The Virginia farmer and the Prussian professional took to each other at once, Washington writing to Congress some days later: "Baron Steuben has arrived at camp. He appears to be much of a gentleman, and so far as I have had an opportunity of judging, a man of military knowledge and acquainted with the world."

Accordingly, after Steuben had been at Valley Forge for a short time, Washington asked his advice. Steuben proposed the establishment of an inspector general to examine conditions and recommend corrections. He was requested to prepare a plan for such an organization. When Steuben had completed it, with the help of Laurens, Greene and Hamilton, Washington approved it and requested the Baron to take on the

duties of temporary inspector. Here, in Steuben's words, are some of the conditions he found:

The situation of affairs in general and of our own Army at Valley Forge in particular, is too well known to need a description. My determination must have been firm that I did not abandon my design when I saw the troops. Matters had to be remedied, but where to commence was the great difficulty. . . . The arms at Valley Forge were in a horrible condition, covered with rust, half of them without bayonets, many from which not a single shot could be fired. . . . The men were literally naked, some of them in the fullest extent of the word. The officers who had coats, had them of every color and make. I saw officers at a grand parade at Valley Forge, mounting guard in a sort of dressing gown, made of an old blanket or woolen bed cover. With regard to their military discipline, I may safely say that no such thing existed. In the first place there was no regular formation. A so-called regiment was formed of three platoons, another of five, eight, nine and the Canadian regiment of twenty-one. The formation of the regiments was as varied as their mode of drill, which only consisted of the manual exercise. Each Colonel had a system of his own, the one according to the English, the other according to the Prussian or the French style. There was only one thing in which they were uniform, and that was, the way of marching in the maneuvers and in the line of march. . . . It would be an endless task to enumerate the abuses which nearly ruined the Army as I found it at Valley Forge in the month of February, 1778.

Steuben did not mention the degree of compliance with orders. In an army where officers were elected there could be very little real discipline. Officers did not know how to give orders and the men did not know how to respond.

One example shows the conditions that existed. Washington was anxious to keep on good terms

with the neighboring farmers, and so issued an order forbidding the burning of fence rails. This had no effect, nor did three further reminders, although one regimental commander plaintively informed his troops that "no fences are to be burned on any pretext whatever." However, "if unavoidable necessity compels us to do it, license must be first obtained from the Commander-in-Chief." Finally, when the fence rails were all gone, he concluded his reminders by saying, "The General positively forbids the burning of the farmers' fences."

Sanitation was another grave problem; indeed, it hardly existed. Steuben attempted to correct the conditions. His first order on the subject had no effect; nor did the second, ten days later. He wasted no more time. Brigade commanders were told to mount a guard with a major in charge, with orders to shoot any soldier who violated regulations.

By no means the perpetual martinet, Steuben allowed his aides to give a banquet for some of the junior officers, stipulating that no one should be admitted who owned a whole pair of breeches. "Such a set of ragged, and at the same time merry fellows," wrote Duponceau, Steuben's aide and admirer of fair ladies, "were never brought together." We may be sure Steuben was in the midst of the group, laughing and joking as much as any. He laughed and joked and cursed in front of his troops as well—but he made them an army.

Steuben enumerated his methods in one of his many letters.

I found it useless to trouble myself about the many things which I could not remedy. I directed my attention to the organization and discipline of the army. . . . I commenced operations by drafting one hundred and twenty men from the line, whom I formed into a guard for the General-in-Chief. I made this guard my military school. I drilled them myself twice a day; and to remove that English prejudice which some officers entertained, namely, that to drill a recruit was a sergeant's duty and beneath the station of an officer, I often took the musket myself to show the men the manual exercise which I wished to introduce. All my instructors were present at each drill. We marched together, wheeled, etc., and in a fortnight my company knew perfectly how to bear arms, had a military air, knew how to march, to form in column, deploy and execute some little maneuvers with excellent precision. . . . I ought to mention the reasons why I departed altogether from the general rule of all European armies, and commenced with the manual exercise in drilling recruits like children learning their alphabet. In the first place I had no time to do otherwise. In our European armies a man who has been drilled for three months is called a recruit; here, in two months, I must have a soldier.

I paraded [my company] in the presence of all the officers of the Army and gave them an opportunity of exhibiting all they knew. They formed in column, deployed, attacked with the bayonet, changed front, etc., etc. It afforded a new and agreeable sight for the young officers and soldiers. Having gained my point, I dispersed my apostles, the inspectors, and my new doctrine was eagerly embraced. I lost no time in extending my operations on a large scale. I applied my system to battalions, afterwards to brigades, and in less than three weeks I executed maneuvers with an entire division in the presence of the Commander-in-Chief.

As part of his training Steuben also found it

necessary to teach the American soldier how to use his bayonet. An enlightened American attitude toward the bayonet is found in "Yankee Doodle," where

Cap'n David had a gun,
He kind o' clapt his hand on't;
And stuck a crooked stabbing iron
Upon the little end on't.

Most Americans did not consider the bayonet a "stabbing iron." When Steuben arrived at the camp he found that half of the troops who did possess bayonets used them only for roasting beef or for some equally unmilitary use. Steuben put a stop to this. His efforts proved their value on the night Wayne stormed the fort at Stony Point and captured a garrison of 600 with the bayonet as his only weapon.

Steuben worked and swore and worked some more, often rising at three in the morning. When, as often happened, his company of ignorant recruits would fail in some simple maneuver, his temper would get the better of him and he would explode in a mixture of German, French and English, often calling for Benjamin Walker, his aide, to come and do the job properly for him. "I can curse dem no more!" In any event, because of this or in spite of it, he got results. From a mob of ignorant men he created a trained and disciplined army. Officers ceased to shrink from labor with the example of industry like that of Steuben before them, or to consider any part of their duty as beneath them. "Do you see there, sir, your colonel instructing that recruit?" he asked one of his assistants one day. "I thank God for that."

The first proof of the value of Steuben's teachings came at the battle of Monmouth, on 28 June 1778, when the American forces, under General Charles Lee, met those of Sir Henry Clinton. As a result of unexpected orders, Sir Henry was attempting to withdraw across New Jersey to Sandy Hook. With the indecision characteristic of him, Lee hesitated a whole day before orders from Washington commanded him to attack at once. Lee reluctantly gave the orders and Wayne moved out smartly with a force of 600 Pennsylvanians and two field pieces. Coming upon unexpected resistance he halted and sent a message back to Lee asking for reinforcements. Nothing happened. Instead, dashing out of the smoke and confusion of the battlefield came the Queen's Rangers and the 16th Dragoons. American troops, now disciplined and trained, stood fast. Their volleys were steady. At last, with fixed bayonets, they dashed at the surprised troopers. Sir Henry himself paid tribute to their skill when he wrote that his cavalry had "to retreat with precipitation upon our infantry."

This was an amazing change from the army Steuben had found less than five months before. Unfortunately, the most that could be done at

Monmouth was to hold the field; but even this was something that could not have been done without the benefit of Steuben's training. He had created a disciplined army.

● Almost two hundred years have passed since Steuben began his task, and the army he founded is now training the descendants of those same soldiers he led for Frederick the Great; training other armies around the world also—44 of them—from Japan and the Philippines to Norway and Denmark.

What can we learn today from Steuben? Can he still improve our army, almost two centuries later? How did he achieve his results? Hundreds of hard-working officers and men today would feel satisfied if they could accomplish half as much.

To begin with, Steuben had an interpreter. (This seems an obvious point, but many officers can testify that today's shortage of qualified interpreters is one of the greatest handicaps in MAAGs and missions.)



THE BETTMANN ARCHIVE

Von Steuben immortalized in stone

Steuben had the rank to command initial respect. Had he been an ignoramus, no rank ever conceived would have helped him. Having it, though, gave him enough time to convince the troops that he knew what he was talking about.

He was given command authority. Today's fond parents might feel he had a little too much, perhaps. That brigade guard, with loaded muskets and orders to shoot, gave him more immediate authority than the Chairman of the Joint Chiefs of Staff has.

Steuben knew his job thoroughly, but he didn't try to do everything at once. The troops he taught had few distractions from their Army existence. When Steuben wanted to train them, they were there.

In the light of Steuben's accomplishments, here are some suggestions for today's MAAGs:

Make sure each instructor either is proficient in the language of the host country or has a qualified interpreter.

Give the officer (or noncommissioned officer) rank commensurate with responsibility. The officer who must advise a colonel should be close in rank, even if it is necessary to revive the brevet.

Arrange with top commanders of allied armies somewhere around the Cabinet level to get our instructors some command authority. An officer without authority is helpless. But to insure professional competence, hand-pick instructors.

Break up the tendency to concentrate most of the advisory group at headquarters, writing directives, while only a handful are detailed to explain those directives to unit leaders.

Have directive writers slow down a bit. Although half the people at a MAAG headquarters are engaged in writing studies to show it has been done, the jump from yesterday's tactics to those of today cannot be made overnight.

Attempt to improve the pay scale of our allies within the framework of their economies, so that it will not be necessary for them to engage in after-hours wage-earning. This may also require action at the Cabinet level, but it will be worth it.

Today's tactics may be more complex than those of Steuben's time, but the fundamentals of training are the same. A little more attention to developing the proper background for training our allies at every level from individual instructor to State Department will yield surprising dividends. We are spending too much money, committing too much manpower, to afford half-hearted efforts in this field. With the proper training now it will not be necessary for a world power, after the next war, to retrain these same troops and armies (and perhaps our own) where we failed. Let's do the job right now.

Nothin's sacred no more in this man's Army, not even the topkick's sacrosanct in-box—or checking the area for a cold one

Day at the Office

MSgt. GERALD L. CRUMLEY

The CQ sauntered in for his noon tour, surprisingly on time, practiced eyes scanning the papers on my desk.

"What's new, Top?" he chirped, and reached an eager claw toward my in-box.

I bashed his fingers with my MCM and informed him nothing concerned him other than the bright prospect of some new store teeth.

"Furthermore, Garrity, not only you but any other overcurious dodo that wanders in here better keep his mitts off my files and paper work."

"How about the Old Man, Sarge?"

"Naturally the commander has access to my entire office," I answered stonily. "And don't start toying with the idea I consider the Captain a dodo, you dodo."

I grabbed my hat from its peg, left the orderly room and slowly counted to ten. On the eleventh count I eased the door back open to see Garrity sifting wide-eyed through the newly completed charge sheets I had left in my desk drawer.

"Geez," he muttered, "four specs against Brickley."

"Why, Sarge, that's downright sneaky."

"GARRITY!"

He jumped, dropping the charges on the floor. Grinning sickly, he shifted his feet nervously and said, "Why Sarge that's downright sneaky."

"I'll sneak you, you khaki draped serpent. AND GIT YOUR FEET OFFA THOSE CHARGE SHEETS!"

He jumped again, then bent to retrieve the papers. "Gee, Sarge, you scared me so when you snuck back in here now your papers got foot marks."

"Garrity," I said, "you've just cost me my lunch. What with no clerk as usual I'll have to retype those for the Old Man and he's due any time." The pleasant little image of salami on whole wheat and a wee can of beer faded reluctantly from mind. "And Garrity, when I lose my lunch you get the custard." I delved into an outline of additional CQ duties and was just warming to the subject when the mail clerk barged in.

"Here's the junk from battalion, Sarge. Say, I just happened to notice in the orders on Corple Ratchet. He got the stripe."

Snatching the bulging envelope from him I applied a second degree glare, snake killing type. "So you just happened to notice, eh? Who appointed you Chief Distribution Checker, you long nosed, canary b . . . git outta here and sort your mail."

He turned for the door, then stopped and said over his shoulder, "Oh, Sarge, you don't hafta notify Sergeant Ratchet. I saw him in the company street just now and gave him a copy of his orders."

He ducked quickly enough for the volume of ARs I threw to fetch up smartly in the hall against the Old Man's ankle.

"OUTCH! Dammitall, Sergeant, every time I come around this orderly room something violent is going on. What is it now?"

"Excuse me, sir, my fault. I was just tossing the mail clerk some reference material and it missed."

The Captain stroked his ankle tenderly. "Things seem to get so disorganized around here at times," he said. "Corporal Ratchet just ran up to my car as I drove in and before I could return his salute he asked me for the rest of the day off to celebrate his promotion. I don't remember seeing his orders."

"Well, sir," I said, "they just came in."

He stopped rubbing and stood up straight. "You mean, Sergeant, he was notified before I was? Isn't it still customary for me to pass out the promotion orders around here? What has happened to the chain of command in this unit?"

The mail clerk glanced at my twitching fingers and did a fadeaway. "Kind of a mixup, sir," I said. "He sort of stumbled into them." I turned to the CQ. "Get me Mister Sergeant Ratchet. I'll teach that channel jumper to ask for a day—"

"Never mind, Sergeant," the Captain said. "I approved his request and saw him running for the bus stop while I was parking my car. He's not around here, I'm sure." He headed for his office saying, "I'd like those charges that were to be ready, Sergeant."

I jumped into the clerk's chair and swung out the typewriter. "Be ready in a jiffy, sir. Hit a bit of a snag." I twisted in the seat to snarl at Garrity. "Friend, you get on the phone and call Maggie's Place. Our newest buck sergeant is no doubt there swilling cold beer and laughin' at me. You tell him I want him here in . . . now what are you looking silly for?"

A look of near-sympathy drifted across Garrity's face as he said, "Uh, Sarge, you're sitting on the carbon paper."

I was experimenting with a gum eraser on the seat of my TWs when the Captain stalked back into the office, flipping a statement of charges onto my desk. "Now, Sergeant, I don't mind an occasional strikeover or such, but when my own name is misspelled . . . well, really, you should check these things."

I glanced at the papers and said, "Sir, the new supply clerk must have taken them direct to your office. He's new and I guess the Supply Sergeant forgot to brief him on how things operate around here. I certainly wouldn't overlook the Captain's name—"

"I get rather curious as to how things operate around here too, Sergeant. Let's try to get a tighter hold on the paperwork flow. Sort of organize things."

"Yessir." I stooped to get some fresh charges from the bottom file drawer and the Captain paused at the door.

"Say, Sergeant," he said. "You must have backed up against one of the kitchen ranges at coffee call. Got quite a smudge there."

Bugle Mouth Garrity sounded off from the corner. "Oh, no, sir. He sat on the carbon paper."

The Captain raised his eyebrows. "Rather a peculiar place to store carbon. Well, I'll be in supply for the next bit. Let me know as soon as those charges are ready. And I'll see Brickley then."

"Yessir." I turned to Garrity again. "All right, Blab-

ber Mouth. Go round up Brickley and tell him to be here at 1300 instead of 1330 like I posted."

Garrity got his silly look again. "But Sarge, Lieutenant Hurdle took him and the Supply Sergeant out to the main ammo point to inventory right after reveille. I bet they'll be gone til dark."

"Well, now. I'll just see about adding a little bitty charge of failing to repair on young friend Brickley. I posted that notice late yesterday afternoon for him to report here today in Class A. He shoulda told the Lieutenant."

Garrity started side stepping for the exit. "Didn't you notice down the hall this morning, Top? The Field First started painting out there last night with the extra duty boys and he had both bulletin boards moved into the supply annex and locked up so they wouldn't get messy. I doubt if Ol' Brick even saw your notice."

The orderly room started filling up with funny clutches of purple spots so I flopped back into my chair. "The Field First diddling with *my* bulletin boards? And what's he using for paint? The only paint in this whole battalion is the cream and green I chiseled to redo the mess hall. . . ." I knew before I started, but just for punishment I walked out the door, down into the lower hall, and surveyed the smooth cream and green walls leading to supply.

"Okay. Now Garrity, I want all the keys to the paint shed. You get a jeep, go to the ammo point, get the Supply Sergeant's key and Brickley. Tell the Lieutenant the Old Man needs him here. Then come back and get the keys from the Motors Sergeant, Field First and Mess Steward. Think you can do that without totally contaminating this company's operation?"

Garrity assumed his most businesslike air and put his garrison cap on backwards. "Sure, Top. Leave it to me. Ah, say, Sarge, when you was talking about the bulletin boards, you know? Well, ah, when you sat down kind of hard, ah, the carbon paper was still there in the chair."

I was playing with the gum eraser again when Garrity came in at 1400 with Brickley.

"Here he is, Sarge. We're a little late, but you seemed to want those keys so bad and the Supply Sergeant had left his key at home so I went after it and while I was there—"

"Never mind your peculiar adventures in the housing area, boy. Just go round up the rest of the keys."

"Okay, Top. I was just going to say that just as I was leaving the Sergeant's house the Battalion Exec drove up and wanted to know what I was doing around there in a military vehicle."

"Just a minute, Garrity. What did you tell him?"

"Oh, no sweat, I told him straight, Sarge. Said I was on direct personal business for you. He said he'd check with you later."

Garrity was back with the remaining keys by the time the Captain had finished with me and Brickley. I grabbed my hat again.

"Now CQ, I'm going home for a sandwich. It's late so I don't reckon I'll be back, unless for emergencies. You do know what an emergency is, don't you?"

"Aw, now, Sarge, you know me. You orta go home and relax. Too many things gone wrong today around this here ch—this outfit."

I managed to shift the rusted iron in my mouth enough to grin at the new neighbor as I eased the car into its slot at the apartment, and her returning smile was disconcerting enough for me not to hear my son's comment from his position on the curb.

"What did you say, boy?"

"Dad, you just drove over my potato shootin' gun. Will it shoot all bent up like that?"

I went into evasion tactics, answering, "Well, we'll see about straightening it, son."

"Well gee whiz, Dad, you drive in here all the time. Seems like you'd notice something just layin' there in plain sight, gee whiz. . . ."

I faked momentary deafness and old wounds and I limped into the kitchen and found a coldie in a remote corner of the reefer. After the third drawer I called to Wife. "Can't find a can opener. Where you hiding them?"

She walked into the kitchen, reached into the bread drawer and handed me a can stabber. "Now Sargie, you're the great organizer around here. And the only beer drinker. Seems you should be able to store your openers in a permanent place. You know, try to organize the implements of your little hobby."

When she turned her back I stuck out my tongue, punched a couple of holes in the can and was looking for a clean glass when the phone rang. I recognized Garrity's normal raspy lung functions before I heard his voice.

"Oh, Sarge, we got a little problem here. Didn't want to bother you as you said nothing but emergencies, and I talked it over with Sergeant Ratchet here—say, you know, he's real proud of his buck rating and we both thought the best thing was to call you, even though it might not be what you would call an emer—"

"What the hell do you want, Garrity? I suppose you and Ratchet are sitting there talking about how to weasel you out of CQ so you both can go to Maggie's."

"Oh no, Sarge. You remember about what I said about the Battalion Exec coming to see you later? Well, he's here now and he said since you weren't around the area and you know what a bug he is on fire safety and he wanted to look in the paint locker and now nobody here has the keys and he's just sort of standing around out there looking kind of funny—red you know—so Ratch and I figgered we'd better call even though you might not think it's really an emer—"

I set the untasted beer on the telephone doily. "Garrity, I'll be there in three minutes. Tell the Exec I'll be right there. Don't say anything more to him, Garrity."

The Wife returned as I was slinging on cap and coat. "Going somewhere?" she asked.

"Little something came up at the company. See you later."

She spied the beer by the telephone. "Sometimes I don't know. Appears to me that you being sort of a big wheel at that company you might control things a little better. Sort of organize things and get a tight grip on your boys, you know."

"Yeah," I answered, and went on outside, trying to remember the words to Grapes of Wrath.

ARMY— cerebrations

LESS PUBLISHING, MORE DOING. *The paper that pours out of minor headquarters is sound and practical—and redundant*

MAJ. THOMAS W. BOWEN

A ceaseless flow of needless advice and direction emanates from our many minor headquarters, much of it from the pens of officers of wide experience and eminent qualification. The advice that pours out from these sources is sound and practical—but the labor and time invested! Almost without exception redundant and wasteful, because almost all the training memorandums, directives and guides turned out by subordinate headquarters throughout the chain of command merely repeat materials that are included in Department of the Army publications.

The Army's literature is conceived by experts. Every bit of its material is painstakingly analyzed, each item and directive is carefully reviewed by the Pentagon before a publication becomes part of our official library. Periodically each publication is reviewed and revised by experts.

Since these publications are available universally, isn't it presumptive as well as wasteful of energy, skills and materials for intervening headquarters to repeatedly republish memorandums and directives? If, instead of publishing, all this effort were spent in reading the basic texts, many advantages could accrue up and down the chain of command. For example, experienced officers, now released from the publishing grind, could be better used to actively supervise training. Administrative personnel likewise could be re-

lieved from the tedious tasks connected with publishing and be used on more constructive jobs. Think too of the savings in paper and other materials.

All these benefits are fine, but the greatest would occur at our lower headquarters. The seemingly endless flow of paper into the subordinate commander's IN basket could be reduced to more manageable proportions. When they are transferred to new posts, officers and enlisted men alike would no longer have to learn a whole new set of local regulations, directives, administrative instructions, and what-not. They would be relieved to learn that issued field manuals, technical manuals, army regulations, and the like were the only guides for all posts. Those trained at ZI schools would find the same regulations and standing operating procedures apply overseas as well as Stateside. They would require no second school through which to become familiar with local ground rules. We could abolish all local rules such as different language for certificates and new styles for preparing papers. The soldier could carry his training from one job to the next without undergoing the painful breaking-in and acclimatization period of low productivity.

The benefits are many. The only danger is to the egos of the publications experts at lower headquarters. Let's begin by having them quit publishing and do more reading.

BETTER USE OF ON-THE-JOB TRAINING. *We can get more out of the two-year soldier*

Major CHARLES L. PECKHAM

It is possible that the efficiency of our on-the-job training and the over-all effectiveness of the Army suffers because of the current training mandatory for non-TOE units. There is much to support the charge that we are not using the two-year soldier to the fullest extent. His total of active-duty time is two years, or 730 days. Here is how those two years of service are divided (the figures represent days): basic training and schools, 80; authorized leave, 60; processing and travel, 30; mandatory training (two hours a week), 20; passes, sick call and dental care (not including hospitalization), 10; authorized holidays, 20; details to include KP, honor guards, range firing, and the like, 10; weekend days, 208; physical training or organized athletics (four hours a week), 40; a total of 478 days.

These figures—they are only an approximation—

indicate that of 730 active days, 254, or less than a year, are devoted to on-the-job training. For example, a garrison unit of 200 men will lose, in unessential training, 400 man-hours a week, or 20,800 man-hours a year.

This poses a problem, since at times it is necessary to reduce the Army's working force without curtailing its mission. To accomplish their missions, all non-TOE units, headquarters of all sizes, and the various other agencies must utilize two-year men. We must also consider that on-the-job training is undergone by most "US" men only during their period of active-duty service. Most of the mandatory training subjects are the same these soldiers learned during basic training and will continue to study during weekly drills after they have passed to USAR units.

There is little evidence to prove that the efficiency

or character of the troops is higher because of the current training program. For example, character guidance—a required subject—causes resentment among many soldiers because they feel they are being forced to hear a sermon. The fact that the troops are of different religions also must be considered. Character guidance is not meant to be presented as a sermon. However, probably as a result of their training, some chaplains present the topic in a style that is not unlike preaching.

All of the foregoing leads to the reason for this mandatory training. I believe it stems from inadequate supervision by noncommissioned officers, under whose guidance every soldier works directly. Where the noncommissioned officer is concerned, the Army itself is guilty of negligence. Through no fault of their own, many noncommissioned officers have not been fully trained, are not given adequate responsibility, nor are the highest standards of performance always demanded of them.

Current thought appears to stress more privileges for noncommissioned officers as a means of improving

the corps and instilling keener esprit. Prestige and high esprit result only from belonging to a select and efficient group, not from additional privileges heaped upon privileges that are as yet unearned.

The noncommissioned officer must be a soldier first, a leader next, and then a specialist. We must exert every effort to train each one and to keep all abreast of the principles of leadership. We can do this through well-prepared weekly classes effectively presented by officers. Also, before promotion to the next grade, each noncommissioned officer should be required to complete the standard extension courses and pass the resultant examinations.

Improved standards for our noncommissioned officers would result in better performance by all other soldiers. Further, it would be possible to make greater use of the two-year soldier in on-the-job training; thus the entire program would improve the efficiency and esprit of the noncommissioned officer corps.

One question should be borne in mind by every officer and noncommissioned officer: Is it logical, or is it just policy?

'LUCKY WINNERS.' *They not only have the habit of being at the right place at the right time, they consistently do the right thing* **Maj. WRONG PLACE**

A lieutenant who shoots up through battlefield promotions all the way to lieutenant colonel is rare enough to become a living legend to his associates. Especially when he has survived to enjoy a peacetime career.

Such a one also becomes fair game for highly critical scrutiny by his contemporaries of lesser age and service. Most of these feel it was simply a case of being in the right place at the right time.

I know one of these "lucky winners." One after the other, his superiors had been evacuated as casualties. His very rapid advancement from acting to permanent division signal officer and his promotion to silver leaves to boot must have been less accidental. That he was so quickly and so well rewarded surely tells us that his general must have valued him highly. Too highly to risk having some unknown senior come in to take his place from out of the replacement pipeline. But, say we with a knowing shake of the head, that could have resulted from favoritism.

Years later, four of us—this same lieutenant colonel and three captains—were seated in one of those greasy-spoons that exist in all large cities. We were there because it was one of the few places available to us for lunch in the dreary area where we were working.

What we liked least about it was the rest of its clientele. Many were elderly and poverty-stricken, very near the Skid Row type. The old women, particularly, were a sorry lot. They came in during the noon hour showing clear signs of an early start on the day's tippling. They were overly inclined to chat with uniformed public servants like us, and usually they became too maudlin for enjoyable conversation.

As we sat there at lunch that day, I felt a bump against the back of my chair. Instinctively I pulled in toward the table to make more room, although I

thought there was already plenty of clearance. Evidently there wasn't, for I got bumped again. Annoyed, I turned and quickly glanced one of the decrepit elderly female habitués of the place. My flash estimate of the situation told me she was drunk and navigating very erratically.

I turned back to my companions and shrugged, hoping the poor old soul would soon steer true on her course again.

All this took place within a few seconds, you realize. Our colonel, with a peculiar stare, was looking over my head at the inebriated one.

"That lady's blind, isn't she?" he asked. Then, before I could even collect myself enough to wonder if he could be right, he said sharply, "Say, that lady is blind!" Suddenly he sprang up and moved around the table, took the old woman by the arm and guided her down a long walk to the self-service counter. Once there, she apparently reassured him she could take care of herself, for he left her and returned.

I will live a long time before I forget what I saw that day: our colonel, tall and manly, bending solicitously over the old woman, guiding her chivalrously by the arm, unconcerned about the spectacle they made, while the other patrons gawked.

Maybe the woman *was* tipsy. I had detected an odor of alcohol about her when I made my brief observations. I realized belatedly that she also was blind, or nearly so. What struck me was our colonel's quick reaction and his immediate decision as to what he should do, without self-consciousness and without embarrassment. (Do I hear you say "leadership"?)

Until this incident, I had been as vocal as the rest during the typical discussions of our colonel's rapid and legendary wartime advancement. "At the right place at the right time," and "Could have happened to

any of us," and so on. After this incident, no more sour grapes from me.

I truly believe now that a man who could react so quickly and so correctly in that prosaic situation would also, at the right time, in the right place (the battlefield), probably do the right thing. ("Show the quality of leadership without exploiting it?")

How about *me*? Should I compare myself unfavorably with the colonel because he had done the right thing and I had not? After all, how much chance had

I to properly appraise the situation, straining awkwardly to look over my shoulder, smelling liquor, judging the problem by earlier experiences?

I had expected to find a drunken old woman, and that's *all* I saw. Now had I been sitting where the colonel was placed, if I had had a better chance to—well, *you* rationalize it for a while.

I think, though, I'll accept the philosophy that when a man is consistently in the right place at the right time, doing the right thing, it's no coincidence.

WHAT'S WRONG WITH THE SQUAT? *We overemphasize kneeling and sitting in comparison to the more combat-useful squat*

Col. HENRY E. KELLY

Trainfire's firing positions have greater value for transfer to combat than do the more stylized positions of known-distance marksmanship. However, I think we over-emphasize the kneeling and sitting positions in comparison to the squat, a more practical position in combat.

Of the three intermediate elevation positions, the squat has certain advantages in combat. It alone affords the flexibility in elevation essential to minimum exposure of the firer compatible with his ability to see the target. In an emergency it permits fastest reaction; for example, against close surprise attack or incoming shell. It avoids placing the body surfaces in contact with ground covered by chemical contamination, ice, water, mud, or thorny vegetation. In future warfare, the avoidance of contact with CBR contamination may be vitally important. The squat can be readily assumed even when the soldier is wearing winter clothing and carrying his equipment. It is the only position that can be used regardless of the slope of the ground at the firing position. Finally, it encourages a ready, aggressive attitude not afforded by either the sitting or kneeling position.

Both the sitting and kneeling positions allow only a relatively fixed elevation. Under combat conditions this can be a serious weakness, where the firer must see without being seen. The sitting position, intended for downhill firing, is really a modification of the squat permitted by the slope which makes sitting readily

feasible. Remember that as the position was originally used in known distance firing, the soldier sat with his feet braced in a lower position on the forward ramp of the firing line embankment.

The major objection to the squatting position is that for many firers it is unsteadier than any of the others, and on the rifle range, the only thing we demand of a position is steadiness. However, unsteadiness in the squatting position results from not enough practice and from lack of physical conditioning. With enough practice, the squatting position becomes more comfortable for most people and steadier than either sitting or kneeling. After all, a goodly portion of the world's people use the squat for resting, eating, and even sleeping. It is all a matter of conditioning. Furthermore, the leg strength developed in attaining comfort in this position is a basic requisite for the infantryman.

Since the aim of rifle marksmanship training consists almost entirely of the value of its transfer to combat, I propose that we increase emphasis in training on the most useful of the intermediate firing positions: the squat. The sitting position can be returned to its basic purpose, the downhill adaptation of the squat. We can eliminate the kneeling position, or at least reduce stress on its inclusion in training. The exercise required to develop steadiness and leg drive at all elevations of the squat can easily be included in physical training drill.

PRINCIPLES FOR SALE. *In many instances a report of survey need never go past the first headquarters that gets it*

Maj. NOLLE PROSSE

Every person charged with a breach of the law is presumed innocent until proved guilty in court. This fundamental principle in our Constitution can be traced to Roman law. Furthermore, every person is guaranteed a trial by jury, says the Bill of Rights.

What does AR 735-10 say? "Commissioned officers and warrant officers having supervisory responsibility for Army property will be charged with the value of any loss of such property unless they can prove by sufficient evidence that the property loss did not result from their fault."

The full impact of this change is probably apparent only to those who have processed reports of survey,

while others shrug it off and forget it—until the day they tangle with the system. (Isn't it amazing how impersonal and unimportant a regulation can be, if you have never had to test what it really means?) The obvious question is: why the change? Since the AR cannot discuss the reasons for junking a basic legal principle, I offer a few theories of my own.

Many survey officers fail to thoroughly investigate, so by the time an appeal reaches the Pentagon for review, it is usually not practicable to obtain additional evidence from the field due to the lapse of time—in many instances a year or more. By simply changing the principle, every person submitting a survey

will be forced to dig up every bit of evidence possible, or, in effect, he will act as his own surveying officer. Thus, it is probably hoped that more complete data will be furnished. Under these conditions, now you can receive a letter from army headquarters that says: "We do not believe you have proved your case; therefore, collections from your pay will be made effective immediately." The last resort is to appeal to the Secretary of the Army, but meantime you must shell out. There may be no admissible evidence against you, but now someone at post or army headquarters can rule against you—and they don't have to explain why.

Two examples may suffice to point out the dangers awaiting future responsible and accountable officers. One survey, finally appealed to DA, wends its way through all intermediate headquarters (obviously tagged "scan only") with recommendations that the officer be held financially liable. However, it isn't until the papers arrive at the Pentagon that someone finally reads and understands the statement submitted by the person surveyed. The file points out that the vouchers used as a basis for holding him liable had been superseded by a consolidated voucher with a date later than the incriminating one, and the items on the consolidated voucher show a zero balance.

This survey must have cost at least \$500 to process, but it should have been stopped by the first headquarters that handled it.

In another incident, the officer surveyed produced overwhelming evidence that he had not been negligent. The surveying officer recommended that all concerned be absolved of responsibility, and the next two higher headquarters concurred. However, based on a reading of the papers and without further investigation, post headquarters recommended that the officer be held liable. The officer surveyed was never able to ascertain why he was held liable; luckily, someone at army could read, and decided the case on its merits rather than on a whim.

Such cases are repeated ad nauseam, but too few are interested enough to check the files closely enough to stop them. The new policy merely legalizes the unlawful actions that some members of post survey boards have been trying to use anyway.

A person determined financially liable through a report of survey in effect has been found guilty of negligence. Therefore he is fined by having to pay the value of the property he has supposedly lost or damaged. By a strict interpretation of UCMJ, he could be tried for failing to properly safeguard Government property. In that event, legal principles would have to be followed and the burden would be upon the Government to prove negligence. Therefore, it is much easier administratively to find him guilty and fine him through the report of survey and not worry about basic legal principles. It should go without saying that whenever a person is held financially liable for Government property that is lost or damaged, the evidence used in determining guilt should be admissible in court.

We must have reports of survey, but let's not use economy as an excuse to toss legal principles overboard or soon we'll lose something that money can never replace. Many injustices will be averted if these provisions are included in AR 735-10:

- Require an evaluation of the evidence by the post staff judge advocate on all recommendations for a finding of financial liability. This will save the Government much money by not processing surveys that should end at post headquarters.

- Insure that the person submitting the survey indicates he has read the final indorsement from post before it goes to army headquarters, and that he has nothing to add.

- Allow "the accused" the right to demand a court-martial if he is determined financially liable, thus suspending such findings (and money collections) until after the court's decision.

The last provision would afford a person the chance to examine all evidence and to exercise his right to cross-examine. It would place the burden of proof on the Government and not on the accused. It would force investigating officers to do a more thorough job and cause post headquarters to think twice before reversing recommendations without obtaining concrete evidence (not mere opinions). Lastly, the rights guaranteed by our Constitution would benefit those who would be first to fight for their preservation.

DRAFTING OR RECRUITING? *Military manpower: how good is as important as how many or how much it costs*

Capt. A. J. SAJO

An old soldier, who rarely left the barracks, once headed for town seeking sport and excitement, his wallet fat with three months' pay. His buddies advised him to stay clear of that crooked poker game at the Red Cat Saloon. But the oldtimer played anyway and lost his shirt. "Sure, I knew it was crooked, but it's the only game in town."

In manpower procurement, the Army's attitude is somewhat the same. Our method of acquiring soldiers is the only one in town. The point of the thought-provoking article, "Manpower for Cold War Forces" by Colonel Francis Drath [November 1960 ARMY] was that the current system for meeting our manpower requirements needed at least a close, critical evalua-

tion, and probably some sort of organizational police call.

For one thing, the author maintained that we spend more than we need to in the field of personnel procurement. The main cause of this extravagance, he says, is that we operate two separate yet overlapping procurement systems: the draft and recruiting. The existence of two agencies with the same mission was characterized, in general terms, as obsolete, inefficient, expensive and redundant. The author contended that a merger of Selective Service and the recruiting services might correct things—that is, of costing less. He conceded that there was no easy answer, but since we were spending around \$100 million a year, cer-

tainly we ought to seek some solution which would give us more soldiers for less dollars.

Or should we? Let's see if we *have* a problem before we seek a solution. We'll evaluate our dual method of procurement and see what's good about it.

In evaluating the draft-recruiting system, we ought to apply the same criteria as were used by Colonel Drath which, themselves, need evaluation. In broad terms, the considerations applied to personnel procurement were the number of men provided and the cost.

First, let's go into numbers. In evaluating the personnel procurement system, the question "how good?" is as vital as "how many?" We organize and train our Army to meet certain standards. Our manpower requirements are not simply for a certain number of men, but for the maximum number of *good* men.

Granted, we must make every effort to reduce costs; but cost becomes paramount only if we think about soldiers merely as the nation's hired or purchased instruments of war. We have not reached that point; most folks still think of soldiers as people and citizens. Dealing with people in general, and their procurement in particular, is loaded with intangible and emotional factors which can never be reduced to a monetary value.

If we consider our dual system of procurement in terms of both quality and quantity, and in terms of the total value received for money spent, we should find no reason to scrap the current method or to merge recruiting and Selective Service. On the contrary, the way we now get people into the armed forces is effective, flexible, cheap for what we get, and then some.

The most obvious proof that our current method is effective is that the system does what it is supposed to do: it procures the number of people needed. Certainly, a merger of the draft with recruiting couldn't do more. The fact that we have both the draft and the recruiting services is an advantage, not a redundancy; the two parallel systems complement each other. The draft, or rather the possibility of being drafted, motivates many young men toward enlistment. They head toward all the services, so that continuation of the draft is just as important to the Navy and the Air Force as it is to the Army. (If current reenlistment rates can be used as a gauge, the Army probably needs the draft *less* than the other services do.) Those additional men who are motivated provide the recruiter with a large pool, allowing him to be more selective in picking the best. Such selectivity would not be possible if the draft and recruiting were merged.

The armed forces recruiting programs aid the Selective Service System. It is usually a recruiter, not a representative of Selective Service, who explains the young man's military obligations. If recruiting and the draft were merged, Selective Service would have to do this. Somehow, the prospect of a draft board clerk speaking at a high school "career day" seems incongruous.

The two-way method of procurement is flexible. It can procure as few or as many recruits as we need. It is essential that our system have this two-way

stretch because of our varying manpower requirements for all types of war. We dare not tie our manpower supply exclusively to any one set of world conditions. Operating both systems gives us this flexibility. We can balance the production of one against the other. If we reach a saturation point, we can halt draft calls and assign recruiters ceilings instead of quotas. By using the draft only to fill in, we are assured at any given time of having the maximum number of volunteers. Eliminating the recruiting services and relying entirely upon the draft would, of course, also eliminate volunteers. A largely volunteer Army, besides being more highly motivated, is more acceptable to the American people. Volunteers serve longer than drafted men and therefore are of greater use to the Army. They are more inclined to reenlist, thus saving training time and money. Keeping the draft means staying ready for sudden large-scale mobilization; keeping the recruiting services means staying adequately manned now.

Flexibility with respect to quality is also built into the current system. Although the qualifications for the draft are fixed by law, the services can alter enlistment standards at will. Higher standards tend to militate against the universality of selective service, and to raise the average quality of the armed forces. To rely entirely upon a draft system would almost eliminate this quality control. We couldn't draft men of a certain mental capacity one month and then change standards the next.

The current system costs a lot but it is cheap for what we get. Every program, from air defense to food inspection, depends upon good men in the first place. The current system gets us the best. It is reasonable to assume that sooner or later any modern nation can produce atomic bombs, cash registers, or whatever The Weapon will be, just about as well as we can. Our advantage, then, is not in industrial production but in the soldiers who provide our balance of international power. Any price is far too little for this advantage.

The fringe benefits accruing to the Army from maintaining a recruiting service are incalculable. For example, the good will generated by the recruiter, who sells not only enlistments but the Army as well. In many communities he is the Army. He can and does more to improve our public relations than all the TV programs and publicity we can imagine. He meets the public face-to-face; each day he answers a thousand questions about the Army; to civilians his is the Army's point of view. He does everything from keeping teenagers in school to advising about allotments. The recruiter joins civic groups, promotes welfare projects and carries the Army's messages. And, incidentally, between club meetings, each year Army recruiters enlist the equivalent of about 80 battle groups.

The old soldier lost his stake in the only poker game in town. So far as manpower procurement is concerned there is also only one game, but for the Army it's the best one. We can't lose: the recruiter and his counterpart on the draft board are on our side and they deal all the hands. The deck they use—our dual system of procurement—is attacked, but stacked with benefits, security, flexibility and effectiveness.

ARMY

authors

CAPT. ROBERT B. ASPREY, USMC inactive (page 15), has been travelling in Europe for the past several months. He contributed the report on Wintershield II in our May issue and we plan to publish his article on the building of the new German Army in our next issue. A professional journalist, specializing on military subjects, Captain Asprey served in the Marine Corps during the Second World War.

LT. COL. CHARLES R. CAWTHON, Infantry (page 24), landed on Omaha Beach with the 116th Infantry and served throughout the European campaign with the 29th Infantry Division. A former newspaperman, he has served in several assignments in the public relations field, and is now on duty in the Pentagon. This is his seventh contribution.

BRIG. GEN. S. L. A. MARSHALL, USAR, retired (page 26), is known throughout the Army as originator of the after-action interview for analyzing the conduct of the soldier in battle, used during World War II and in Korea. His article was written after he returned from an extended visit to the Congo.

LT. COL. ROBERT C. STOREY, Infantry (page 30), is Chief of the Officer Branch, Classification Standards Division, ODCSPER, where one of his projects has been the new efficiency reporting system. Colonel Storey has completed courses in personnel management at two universities, and for several years has worked with Navy, Air Force and civilian authorities concerned with similar problems.

COL. LEONARD L. HASEMAN, Corps of Engineers (page 38), served in both the Pacific and European theaters during World War II. After a tour as chief of the Intelligence and Mapping Division, Office of the Chief of Engineers, he now heads the newly established Geodesy, Intelligence and Mapping Research and Development Agency at Fort Belvoir.

CHARLES A. DODSON (page 41), is an Associate Editor of ARMY.

MAJOR E. M. GERSHATER, Chemical Corps (page 47), after a tour as instructor at USMA, is a training advisor to the service schools of the Chinese Nationalist Army on Taiwan. He is a graduate of the Uni-

versity of Nebraska and the CGSC at Leavenworth. This is his third contribution.

LT. HENRY H. HARPER, Chemical Corps (page 50), was commissioned from Engineer OCS in 1954 and later transferred to the Chemical Corps. He has commanded the 22d Chemical Company (Combat Support), and is now assistant chemical officer, 82d Airborne Division. His collaborator, LT. DAVID M. PARKER, Chemical Corps, was commissioned from Engineer OCS in 1953, served in Korea, returned to civilian life, and rejoined to enter the Chemical Corps. He is now assistant information officer, Chemical Corps Training Command. JAMES W. POLING (page 52), is a free-lance writer. During World War II he served in an aircraft carrier and with a Navy air group. He has written for 23 national magazines and is the author of two books. At one time he was a story editor in Hollywood.

CAPT. CLARE R. J. ROGERS, Signal Corps (page 56), was commissioned from Cornell University ROTC in 1953. As a member of MAAG Taiwan he was the first advisor to the Chinese Nationalist Army Radio Relay Company. Captain Rogers, who has also served with MAAG Iran, is PMS at Worcester (Mass.) Polytechnic Institute.

MASTER SGT. GERALD L. CRUMLEY (page 59), an occasional contributor, is an MOI instructor at Fort Leonard Wood. His latest was "Treadmill to Frustration" (April 1961).

Among this month's Cerebrationists, MAJOR THOMAS W. BOWEN, Armor (page 61), an occasional contributor, is with the faculty at USMA. MAJOR CHARLES L. PECKHAM, Infantry (page 61), served in Korea where he was a POW for three years, and is now executive officer at Quarry Heights and assistant headquarters commandant of Caribbean Command. COL. HENRY E. KELLY, USA, retired, is with the Infantry Humrro unit at Fort Benning, Ga. CAPT. ALEXANDER J. SAJO, AGC (page 64), has served in the field of personnel procurement both as a recruiting officer in the field and now as reenlistment officer for U. S. Army, Europe.

FRONT AND CENTER

(Continued from page 12)

pete with union scales, the same as everyone else," he said.

On the brighter side, General Laux cited a \$27.6 million sales increase in PXs over Fiscal Year 1960. "Sales may have been influenced somewhat by an increasing dependent population and heavier-than-usual shopping overseas during the two months following the Presidential directive on gold. But I am firmly convinced that the vast share of the increase was due to more universal customer satisfaction with quality and assortments, greater stock depths, and with facility and service improvements generally. As you can appreciate, our customers, like any retailer's, can be vocal in their approval or criticism. But they speak most eloquently with dollar bills!"

General Laux commended local information and community relations officers who have substantially contributed to better understanding of PX service among local merchants. "I think it is most significant," he emphasized, "that for the first time in recent years, the National Retail Merchants Association failed to adopt a plank critical of exchanges at its 1961 annual meeting."



Sp 7 Franklin J. Owen, Chief Clerk in the Office of the Chaplain, Headquarters, U. S. Army Air Defense Command, is the 1961 Army skeet champion. He won the individual championship by breaking 199 targets out of a possible 200. This placed him second in the all-gauge world military event.

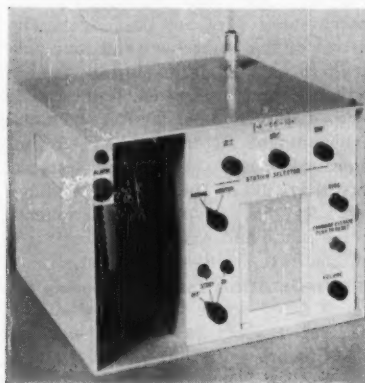
ARMY

irons in the fire

Tactical Commo Breakthrough

That bane of the tactical radio operator and commander, radio interference, may be on the way out with development of a Random Access and Correlation for Extended Performance (RACEP) radiotelephone system by the Martin Company of Orlando, Fla.

Adapting a new modulation tech-



Simplicity of operation features RACEP.

nique to carry voices in the form of quick pulses of radio energy on a single frequency band, the new rt will allow simultaneous communications between many persons and locations. It achieves its extraordinary performance by putting to use the pauses and breaks in nor-

mal conversation as well as the idle time between calls.

This is accomplished by disintegrating and coding speech signals into millionth-of-a-second fragments, combining them at random, and transmitting them all at once over the same channel. Only receivers preset for the proper code of a specific conversation can receive it and reconstruct its fragments into a normal flow of speech. The coded circuits of transmitters can be varied manually to match those of particular receivers.

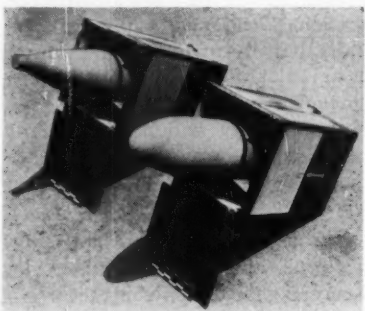
A Martin electronics engineer likened the system to a huge bin into which colored glass marbles are flung at random for rapid transport through a pipeline so narrow it can admit only one marble at a time. Hundreds of tie-lines along its length are just as narrow, but have traps that will pass a single color and no other. The marbles are pulverized in the bin and mixed together. As the colored glass flows through the main line, the tie-lines capture the properly colored particles and reconstruct them into individual marbles.

Radio engineers envision almost unlimited communications capability in a tactical area through the use of RACEP. In spite of the tremendous amount of tactical traffic taking place, clear, unhampered communication may be achieved over the entire battle area with the ease of turning a knob and picking up a telephone.

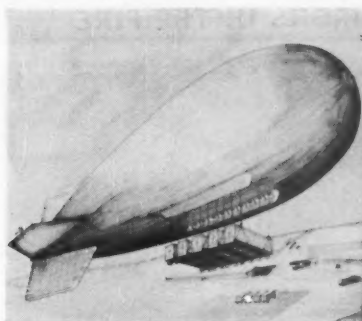
Mauler Development Continues

Development by ARGMA of the Mauler air defense system is going ahead with the award of a contract in excess of \$6 million to the Convair Division of General Dynamics.

Each Mauler unit, designed to travel with fast-moving Army units on the battlefield and defend them against high performance tactical aircraft and short range missiles and rockets, will be self-contained on self-propelled chassis.



Two nose configurations of the French ENTAC guided missile for use against tanks are shown here. The U. S. Army has decided to buy the 27-pound missile and as the equipment becomes available the currently-used SS-10 will be phased out.

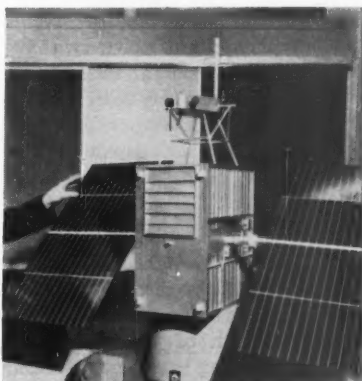


One solution to the space-age problem of transporting huge loads, such as the Saturn and larger rockets, has been advanced by the Claude G. Slate Co., Glendale, Calif., which proposes to build an all-metal jet-powered dirigible. Called "a \$15 million project on which construction can start immediately," the dirigible would be capable of carrying a 250,000-pound payload cross-country at speeds up to 100 miles per hour.

Advent Satellite Readied

Under the overall management of the Army and under development by General Electric, the joint Army-Navy-Air Force Advent communications satellite system is being designed to prove the feasibility of microwave satellite communications.

The system will require at least three satellites in a 22,300-mile syn-



Here's a model of the Army-managed Advent communications satellite being designed to test feasibility of global microwave satellite communications. When orbited, satellites will appear stationary over one point on Earth.

chronous orbit (appearing stationary over a given point on Earth). Two earthside terminals, at Camp Roberts, Calif., and Fort Dix, N. J., and one aboard a Navy ship will be used to test the system.

In the Advent system, the signal



Power for remote military operations is provided by PM-1 nuclear plant being built by the Martin Company. Air Force TSgt. Robert S. Ulrich and Army SFC Norman N. Raskin, members of operating crew, examine full-scale model of a two-year loading for PM-1 which will provide heat and electricity for an AF radar station near Sundance, Wyo. Plant will do the job of millions of gallons of diesel fuel.

beamed to the satellite will be received, amplified and relayed instantly to the receiving station. High-speed radio teletype and voice broadcasts will be transmitted simultaneously.

When in sunlight power will be drawn from the sun (see April ARMY) and when the vehicle is in darkness, it will use nickel-cadmium batteries. Life span of the satellites has been set at one year.

Drive System to Lighten Trucks

With the trend to lighter weight in Army vehicles, the Siegler Corporation has received an Army contract for installation of their radically new alternating current electric drive system which will reduce the weight of a "deuce-and-a-half" by as much as 1,800 pounds.

Locomotion of the vehicle would be by induction traction motors integrally built into each wheel. The motors would be operated by alternating current produced by an engine powered generator and fed to the individual motors through an electronic device called a static frequency changer.

Siegler said that because of the

hot sparks

SELECTED reading list on space flight compiled by Bell Telephone Lab Tech Info Library available for asking from Bell at 463 West St., New York 14. . . . **TILT-WING** Vertol 76 aircraft getting more Army money for development. The 76 is claimed to be first successful tilt-wing VTOL aircraft. . . . **MACHINE** that can wire over ten times faster than a man now installed at General Electric Ordnance Dept., Pittsfield, Mass. New machine automatically feeds, positions, cuts to length, strips, and wraps both ends of a wire to terminal posts on a circuit module in less than seven seconds. . . . **STIMULATOR**, Ford's latest, is non-political "Mudslinger" designed to scoop up mud, dehydrate it and combine it with by-products of wood pulp, straw, cornstalks, and so on, then roll it into a military road. . . . **CANADIAN Government** has offered to develop small, tracked, lightweight vehicle for U.S. Army. Planned as replacement for the Weasel and M14A1 one-ton sled. . . . **LABORATORY scientists**, according to Acoustica Associates, are working on quick breakdown of carbon dioxide back into breathable carbon and oxygen by use of ultrasonics. Breakthrough would find immediate life-saving use in closed submarines and space capsules. . . . **AUTOMATED production** of deposited carbon resistors announced by Western Electric at Winston-Salem, N. C. Resistors are electronic components that must meet severe electrical requirements, yet operate thousands of years on the average without failure. . . . **BRIG. GEN. David Sarnoff** says that RCA scientists have developed plans for establishing —through remotely-controlled elec-

tronic equipment—a well-stocked moon camp complete with food, water and power before the first man takes on a lunar flight. . . . **LAST HU-1A** 'copter has been delivered to the Army by Bell. Bell now turning out advanced model of the Iroquois Series, the HU-1B. . . . **ENGINEERS** now using air mattresses to support assault bridges for under-fire crossings when time is of essence. . . . **WILLYS** has contract for 1,150 "jeep" ambulances. Can carry three stretcher passengers and driver or two stretchers and four passengers. . . . **CARIBOU** getting workout on Greenland icecap this summer. The two on loan to the Polar Research and Development Center will aid in numerous research projects. . . . **SIKORSKY H-37s**, 30 of them, being modified into H-37Bs. Several improvements being made and Army is getting them at the rate of five per month. . . . **TRANSPORTATION Corps** ocean-going tug being fitted up as fireboat by adding pair of Boeing gas-turbine engines. Each pump will move 2,000 gallons per minute. Will be put into service at Wilmington, N. C., for handling ships and fire protection. . . . **AUTOMATION** required for checking out missiles is moving into the Army's ground vehicle area with development of computer controlled system for use with M48 tanks at Frankford Arsenal. Engineers able to spot tank trouble without need to remove or disassemble major parts. . . . **POWERFUL new xenon lamp** with rated capacity of 8,000 watts developed for Engineers by Duro Test Corp. Designed for powerful searchlights, may have numerous other military, space and commercial possibilities.

reduction in weight through elimination of several conventional parts, the payload of a 2½-ton vehicle could be increased by as much as 40 per cent.

Army Gets Mobile Radar Set

Featuring a 25-foot telescoping antenna mast offering "quick look" capability and long-range surveillance of moving targets, a new and completely mobile radar unit is under development for the Army.

A modification of the shelter-housed AN-TPS-25 set already operational, the new radar will be installed in armored personnel carrier, the M-257, which is a tracked amphibious vehicle offering great mobility and protection for surveillance purposes. Speeds are 40 mph on land and 4 mph on water.

The Hazeltine Corporation is doing the development under an Army Signal Corps contract.

ARMY

books

THE WORD ON INTELLIGENCE

COMBAT INTELLIGENCE IN MODERN WAR.
Lt. Col. Irving Heymont. The Stackpole Company. 244 Pages; Illustrated; Maps; Index; \$6.00.

Reviewed by

LT. COL. STEDMAN CHANDLER, a former infantry and intelligence officer, and co-author of *Front-Line Intelligence*.

It is quite idle to compare this book with any of its predecessors, all of which are out of date if not out of print; indeed, this work antedates Cuba, Laos, Commander Shepard, even the word "sub-belligerency." Nevertheless, though no one will ever have the last word on intelligence, Colonel Heymont has the current word. Combat intelligence finally is related to the Missile Age, and in a manner that must be rated a success.

An odd book in one respect, it is mostly appendix; only 108 of its 244 pages are straight text, but the over-all organization is admirable. Though the illustrations are few and unexciting, the charts are excellent and the tie-in of appendix to text is deft and simple to follow. Colonel Heymont's prose is economical, unemotional and unadorned, but clear as spring water. He packs his paragraphs with facts, apt historical citations and perceptive comment. In the appendixes he provides not only sample forms and patterns but brings them to whole or partial completion and in some instances "explodes" them to the *n*th degree. Even though the terms are overworked, it is accurate to call this treatment nuts-and-bolts, shirt-sleeves intelligence—served up with plenty of sound theory and basic principle. Written for all, it should cause a corporal no more mental strain than a general, and there is meat for both.

It is refreshing to list some of the subjects treated. True, some may become "obsolete in the lab-

oratory" but, in so far as possible, we are brought up to date on CBR warfare; limited and unconventional warfare and situations short of war; electronic and infrared devices and combat surveillance; psychological warfare; logistical and air intelligence; guerrillas and stay-behind units; the effects of weather and climate on nuclear operations. We begin with basic principles and reach into space, but at no point is the author rigid or doctrinaire. He believes intelligence must be both flexible and imaginative; that forms and patterns are guide lines, not fences; that the effective intelligence officer must adjust both his thinking and his methods to existing conditions, his only fixation being his commander's mission. He deplores mystery as an ingredient of intelligence, is a proponent of hard work, simple methods, serious and ceaseless study. There is nothing new in this doctrine, but it is historically sound and has at last been interrelated with modern technology.

Stating that "nuclear weapons and electronics have not changed the time-proven principles of war but have only modified their application," Colonel Heymont goes on to stress the fact that "as important as combat intelligence has been in the past it is even more important now that nuclear weapons are available. The devastating effects of these weapons and the speed, range and accuracy of their delivery make intelligence the key to battlefield success."

Certainly intelligence is also the key to national survival, and this fact provokes an unavoidable comment: if certain topside people in government (particularly, we suspect, in CIA) had read and even partially digested Colonel Heymont, some recent tragic mistakes could scarcely have been made. Intelligence, by definition, is the

meaning and significance of collected facts and information. Whereas faulty intelligence sometimes is excusable, the same cannot be said for that paradoxical but possible phenomenon: stupid intelligence. Unfortunately, we have seen stupid intelligence in action—but you will not find it in this book. Of course, you don't have to be a biscuit to write sensibly about baking, but I have the feeling Colonel Heymont is a superior intelligence teacher who might also be a superior practitioner. All too obviously this is a breed we need.

DECISION ON LITTLE BOY

JAPAN SUBDUED. Herbert Feis. Princeton University Press. 199 Pages; Index; \$4.00.

Reviewed by

STANLEY L. FALK, who is currently working on the Army's official history of the development of the atomic bomb.

In the late spring of 1945, with Germany defeated and peace at last achieved in Europe, the Allies turned their full attention to the task of ending the war in the Pacific. Japan, it was clear, was already beaten; only the Japanese rulers remain unconvinced. An intense analysis and debate took place in Allied councils, particularly among U. S. planners, on how best to force the surrender of Japan. And in that besieged land itself, a strange and bitter struggle was being fought between the advocates of peace and those of continued resistance. Yet the drama that unfolded in Washington, at the momentous Potsdam Conference, and in bombed and burning Tokyo, was overshadowed by the ominous mushroom cloud rising from the atomic test site in New Mexico. The events leading to the dropping of the atomic bomb and the first searching attempts to establish an effective American policy on nuclear energy are the dramatic subjects of *Japan Subdued*.

With this slim volume, Herbert Feis brings to a close his series of perceptive studies on the diplomacy of World War II. Historian, economist, consultant to the State and War Departments, he is an experienced observer and student of U.S. foreign policy. For his latest effort

Selected Check List of the Month's Books

This is a run-down of some of the books we have recently received.

BAYONETS TO LHASA. Peter Fleming. Harper & brothers. 319 Pages; Illustrated; Maps; Index; \$4.95. The story of the British campaign in Tibet in 1904 led by Col. Francis Younghusband, fought in mountain passes 19,000 feet high. Based on official records.

BRASSEY'S ANNUAL, 1960. Rear Adm. H. G. Thursfield, ed. The Macmillan Company. 364 Pages; Illustrated; Maps; Index; \$9.50. The 71st year of this solid annual, which has outlived all others. While its articles are from the viewpoint of the British Commonwealth, it has much of interest to the USA and NATO.

GUN DIGEST TREASURY. John T. Amber, ed. Gun Digest Association. 384 Pages; Illustrated; \$3.95. The gun bug can probably do without this collection of top articles from the first 15 years of *The Gun Digest*, but he shouldn't. These are the best from the annual publication, and are for the library.

THE HIDDEN FACE OF THE CIVIL WAR. Otto Eisenschiml. Bobbs-Merrill Company. 319 Pages; Maps; Index; \$5.00. The author warns that you must shed all preconceived opinions about leadership on both sides, and let yourself be guided solely by his evidence. Sometimes it will rock you, especially his evaluation of high commanders. For Civil War debaters.

KILL OR GET KILLED. Col. Rex Applegate. The Stackpole Company. 381 Pages; Illustrated; Index; \$3.75. Subduing an opponent, self-defense, mob control, armed and unarmed combat—including all the dirty tricks. Fourth edition.

THE LEGACY OF THE CIVIL WAR. Robert Penn Warren. Random House. 109 Pages; \$2.75. A penetrating essay on the influence of the Civil War on our economy, our social institutions, our domestic politics and foreign policy, our philosophy and psychology.

NRA ILLUSTRATED RELOADING HANDBOOK. National Rifle Association. 224 Pages; Illustrated; Index; Cloth \$4.50; Paper \$3.50. Sixty major chapters and 45 short ones, on every phase of reloading for rifle, shotgun and pistol, casting bullets, handling powder, treatment of cases, and loading tables. Includes storage and many practical wrinkles in handloading.

THE PATH TO LEADERSHIP. Field Marshal Montgomery. G. P. Putnam's Sons. 256 Pages; \$4.50. Personal studies ranging from the Field Marshal's contemporaries of two wars, back through Lincoln to Cromwell and even Moses, with special attention to Nehru, Lord Nuffield, Khrushchev, and the leaders of Communist China.

PROJECT VANGUARD. Kurt R. Stehling. Doubleday & Company. 312 Pages; Illustrated; Index; \$4.50. Vanguard's head of propulsion tells why the program has become one of the most highly developed of U.S. rocket-launch vehicles.

REBELLION IN MISSOURI. Col. Hans Christian Adamson. Chilton Books. 305 Pages; Illustrated; Maps; Index; \$5.00. A detailed account of how Nathaniel Lyon and his Army of the West saved Missouri for the Union during 1861. Includes political maneuvering and military actions to include the Battle of Wilsons Creek (Springfield).

RELUCTANT GENERAL. Bob Duncan. E. P. Dutton & Company. 289 Pages; Index; \$5.00. A good biography of Brig. Gen. Albert Pike—teacher, travel writer, poet, lawyer, politician, gourmand, and Freemasonry's philosopher and historian. He led the Confederate Indian division at Pea Ridge (Elkhorn Tavern).

SOLDIER LIFE IN THE UNION AND CONFEDERATE ARMIES. Philip Van Doren Stern, ed. Indiana University Press and Fawcett World Library. 400 Pages; Illustrated; Index; Cloth \$6.95; Paper \$7.75. The now rare *Hardtack and Coffee* by John D. Billings, and *Detailed Minutiae of Soldier Life in the ANV*, by Carlton McCarthy. They tell of life in camp and on the march, songs, rations, fatigue duties, punishments, uniforms, equipment and weapons.

SOVIET SPACE TECHNOLOGY. Alfred J. Zaehring. Harper & Brothers. 179 Pages; Illustrated; Index; \$3.95. All available information concerning Soviet rockets, missiles and space technology, to include Sputniks and Luniks. A solid work, by a recognized national rocket expert.

TASCHEN BUCH FÜR WEHR FRAGEN, 1960-61 (Manual of Defense Information). Dr. Hans Edgar Jahn and others. Umschau Verlag. 632 Pages; Illustrated; Maps; Index; DM 14. Pocket-sized encyclopedia of information on the defense forces of West Germany: organization, insignia, uniforms, weapons, vehicles, arms and services. Foreword by Defense Minister Strauss.

UNIFORMS OF THE UNITED STATES ARMY, Second Series. Thomas Yoseloff. \$25.00. The final 26 full-color paintings by Henry Alexander Ogden, supplemented by 48 pages of descriptive text by Marvin Pakula. This volume shows the many uniforms worn by the Army during the period 1888-1907. Reviewed in ARMY for June 1960.

he has used State Department and Army archives, memoirs, and interviews, and has blended his material skillfully and dispassionately to provide a first-rate account and analysis.

With caution and knowledgeable reflection, Feis discusses the major questions involved in the effort to force Japan's surrender. Was the use of the atomic bomb necessary? Without it, how much longer and at what cost would the war have continued? What was the effect of the Soviet entry? Would a clear guarantee of the Emperor's position have brought an earlier surrender? To none of these does he attempt a final answer, but his presentation of alternatives is thoughtful and stimulating. He concludes that, given the situation in the summer of 1945, "the only score on which the American government can be fairly criticized" is that it did not inform the Japanese in advance of "the nature and destructive power" of the A-bomb.

Japan Subdued is not the first study to be made of these matters, nor will it be the last; but so far it is surely the most careful, most impressive, and least emotional. Objective, detailed, almost painstaking in his reconstruction of events and assumptions, Feis is at the same time a skillful narrator who does not eschew the personal touch nor hesitate to set forth his own doubts and misgivings. The result is a highly readable and informative discussion, a major contribution on a most difficult subject.

MILITARY-CIVIL AID TO KOREA

MILITARY POLICY AND ECONOMIC AID: The Korean Case, 1950-53. Gene M. Lyons. Ohio State University Press. 298 Pages; Index; \$4.50.

Reviewed by

RILEY SUNDERLAND, who helped write three volumes of the Army's official history of World War II in the Far East.

Professor Lyons modestly describes his book as a "case study." The doctors define *case history* as: "The past history of any particular case of disease. It includes the information obtained concerning the patient, his family, his previous environment, experiences, and sensations." Thus, it is the story of

one patient's experience with one disease; illuminating, suggestive, but not definitive, and certainly written for the specialist. In line with this idea, the author has carefully set limits to his work. He tells of the organization and direction of the American program for economic aid to Korea. The reader who wants to see the story against the background of Korean history, say, or wants to relate it to Korean economic problems, will have to do his own digging. The reader who wants to know how the United States set about to give economic aid to Korea will find the story here.

Professor Lyons' method, if one may call it that, is interesting. The first 90 per cent or so of each chapter is a careful, pedestrian passage from document to communiqué and back again; then Professor Lyons offers some paragraphs of comment. In writing them he could draw upon his own experiences with Korean relief and upon his access to the papers of Dr. J. Donald Kingsley, first Agent General of the U.S. Korean Reconstruction Agency, together with interviews with many senior civilians and soldiers involved in Korean relief. These comments are worth the effort to reach them.

Two problems faced these Americans, military or civilian, who tried to restore Korea: reconciling military priorities with the needs of Korean civilians, and making the aid program genuinely international. As regards the first, there was no doubt that the Army and the Air Force had to have first call on railroads and ports, but to translate that priority into tons of supplies was another matter. Moreover, the services were even more afraid to set precedents that might result in diluting their control. As regarded the international aspects, U.S. agencies such as the State Department and the Congress found it hard to define the national policy. Months passed, and the military had to deal with the relief problem on an improvised, ad hoc basis. During these passing months there also passed the opportunity for a clear-cut, coherent policy that might have had its effect on world opinion. Moreover, rehabilitation had to yield to improvised meas-

ures of relief; it may be that recent disturbances in Korea can in part be traced to expedients of earlier years, expedients that may not have gone far enough and deep enough.

This book is for the reader concerned about learning how the U.S. Government functions, about civil-military relations at home and abroad, about civil affairs in a theater of operations. To such, the author offers not panaceas, but a most interesting case history and some shrewd comment on the possible treatment for the case under discussion. The reader will then have to weave the book into his professional experience even as would his family doctor with a case history from the AMA journal.

CONCISE CIVIL WAR HISTORY

THE COMPACT HISTORY OF THE CIVIL WAR.
Cols. R. Ernest Dupuy & Trevor N. Dupuy.
Hawthorn Books. 445 Pages; Maps; Index, \$6.75.

Reviewed by

CAPT. VICTOR GONDOS, JR., Chief of the Civil War Records Division of the National Archives.

Compact is indeed the word for this work. To it add terse which, as defined by Webster, is "elegantly concise." There is not a wasted word. It is a pleasure to read the close, carefully pruned writing characterizing this summary military history of the Civil War. The strategic and tactical essentials of each important movement, battle, and campaign are so presented that "he who runs may read" and, better still, comprehend.

The book is recommended as a refresher for Centennial-awakened oldsters, and to TV-trained gray-haired youngsters who feel the need of a balanced, panoramic, but brief view of their country's greatest conflict. To the confirmed Civil War buff it is, of course, a twice-told tale, but even he may enjoy the authors' independent appraisals, such as this comment on the usually downgraded Confederate chief executive: "From an over-all standpoint, Davis was an excellent war president [but] two terrible blows fate dealt him. As a war president he could never avoid being measured against Abraham Lincoln. And as a Confeder-

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7. **EVERY SERVICEMAN'S LAWYER**—By Maj. Earl Snyder, JAGD, USAF. Lets you know where you stand, how to avoid mistakes.

8. **PRINCIPLES OF INSURANCE AND GOVERNMENT BENEFITS**—By Associates in the Social Sciences, USMA, West Point. Will mean money to you.

9. **PRINCIPLES OF PERSONAL FINANCE**—How to get the most from your Army pay. Authoritative by members of the USMA staff, West Point.

Alternate selections in place of any of the above: **COMBAT INTELLIGENCE IN MODERN WARFARE**, or **NEW DEVELOPMENTS IN ARMY WEAPONS, TACTICS, ORGANIZATION AND EQUIPMENT**. Specify which alternate is desired, if any.

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Gen. William H. Simpson
San Antonio, Tex.
Charles M. Spofford
New York, N. Y.
Gen. Maxwell D. Taylor
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LCol. Jack M. Warner, Jr.
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Columbus, Ohio

Judge George W. Latimer
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Dr. William H. Martin
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BGen. Frank McCarthy
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MGen. George Olmsted
Washington, D. C.

Frank Pace, Jr.
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MGen. Patrick J. Ryan
Washington, D. C.

Sen. John Sparkman
Washington, D. C.

MGen. Leif J. Sverdrup
St. Louis, Mo.

Ben H. Wooten
Dallas, Tex.

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George M. Davidson
Indianapolis, Ind.

MGen. Chester R. Davis
Chicago, Ill.

Donald Douglas, Jr.
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Rev. Edward L. R. Elson
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Chris P. Fox
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Gov. Otto Kerner
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Dr. Henry A. Kissinger
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LGen. William S. Lawton
Bethesda, Md.

Hugh M. Milton, II
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MGen. Kenneth D. Nichols
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BGen. Wendell C. Phillippi
Indianapolis, Ind.

R. S. Reynolds, Jr.
Richmond, Va.

N. D. Showalter
Seattle, Wash.

MGen. W. J. Sutton
San Antonio, Tex.

Sen. Strom Thurmond
Washington, D. C.

ate leader . . . most unfairly . . . compared with Robert E. Lee." Another unpopular figure, Ben Butler, too, gets a pat for his creditable administrative job at New Orleans.

The authors believe the top commanders of the Army of the Potomac muffed several golden chances to end the war two years earlier: the first was "McClellan . . . with all the trumps . . . in his hand . . . could have ended the Civil War on the banks of a Maryland creek in 1862"; the second slip was Hooker's at Chancellorsville; the third, that so enraged Lincoln, was Meade's failure to cash in on Gettysburg. They make it quite plain that, in the ultimate grand strategy of the war, the overemphasized activities in the East rank only as holding operations, while the war was won in the West, largely by the combined efforts of Grant, Sherman, and the Navy. Four chapters exclusively and generous parts of some others are devoted to the roles played by the navies.

Understandably, the authors never lose a chance to identify West Pointers on either side, and credit Denis Hart Mahan, Professor of the Art of War at USMA, for inculcating "standards of combat leadership in the Civil War . . . far superior to those displayed . . . by the professional officers of Europe's leading armies during the Crimean War."

The book, of course, is not a history of the whole Civil War in all its varied manifestations and struggles in the diplomatic, financial, economic, social, and political arenas. No book of 445 pages could possibly do so involved a job. The authors' work, however, can rest on its laurels as a fair, non-polemical, clear presentation of the tactical and strategic highlights of the conflict. (It earned this year's Fletcher Pratt Award of the New York Chapter of the Civil War Round Table.)

A very useful feature is the inclusion of some twoscore sketch maps and two endpaper maps of the whole theater of war. There is an appendix on arms and uniforms, a basic bibliography of some 60 titles, and an adequate index.

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